A tread base includes a tread base frame unit with front and rear belt wheel sets arranged at opposing front and rear sides thereof, and an endless running belt mounted around the front and rear belt wheel sets and having slats transversely arranged on the outer perimeter thereof in a parallel manner. The running belt includes a plurality of movable sliding rollers respectively mounted at the opposing left and right ends of the slats. The tread base frame unit includes two smoothly arched sliding tracks longitudinally arranged in parallel for supporting and guiding the movable sliding rollers of the running belt to enhance the moving stability of the running belt, preventing breaking of the slats of the running belt, avoiding danger and prolonging the lifespan of the tread base.
TREAD BASE FOR TREADMILL

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to treadmill technology and more particularly, to a tread base for treadmill, which has two sliding tracks arranged on a tread base frame unit for supporting and guiding the movement of a movable sliding roller-equipped running belt to enhance the moving stability of the running belt, preventing breaking of slat components of the running belt and prolonging the lifespan of the tread base.

2. Description of the Related Art

[0002] US2012/010053A1 discloses a manually operated treadmill, which includes a treadmill frame having a front end and a rear end opposite the front end, a front shaft rotatably coupled to the treadmill frame at the front end, a rear shaft rotatably coupled to the treadmill frame at the rear end, and a running belt including a curved running surface upon which the user of the treadmill may run. The running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running surface of the running belt to move from the front shaft toward the rear shaft. The treadmill is configured to control the speed of the running belt to facilitate the maintenance of the contour of the curved running surface.

[0003] However, this design of treadmill is still not satisfactory in function and has drawbacks as follows:

[0004] 1. The running belt is comprised of a plurality of slat components; when the user is running on the running belt, the left and right bearing support frames supports the opposing left and right sides of the running belt, however, a large part of each slat component is suspended in the open air without support, and thus, the slat components can break easily upon a heavy impact force, causing accidents.

[0005] 2. The bearings (non-sliding rollers) at the opposing left and right sides of the tread base frame unit are rotatable but not movable with the running belt, unable to enhance the moving smoothness of the running belt.

[0006] 3. The left and right bearing support frames must be precisely processed to provide precision bearing holes for the mounting of respective bearings; if the machining tolerances of the bearing holes are slightly different, the sliding smoothness of the running belt can be reduced, leading to a defective product; the machining of the bearing holes and the installation of the bearings are complicated and need much labor and time, greatly increasing the manufacturing cost of the treadmill.


SUMMARY OF THE INVENTION

[0008] The present invention has been accomplished under the circumstances in view. It is therefore the main object of the present invention to provide a tread base for treadmill, which has sliding tracks arranged on the tread base frame unit for supporting and guiding the movement of the movable sliding rollers of the running belt, enhancing the moving stability of the running belt.

[0009] It is another object of the present invention to provide a tread base for treadmill, which has sliding tracks arranged on the tread base frame unit for supporting and guiding the movement of the movable sliding rollers of the running belt, so that the impact force produced during running of the user on the running belt can be distributed through the movable sliding rollers of the running belt to the sliding tracks of the tread base frame unit, preventing breaking of the slats of the running belt, avoiding danger and prolonging the lifespan of the tread base.

[0010] It is still another object of the present invention to provide a tread base for treadmill, which facilitates the fabrication and installation of the movable sliding rollers and the sliding tracks without tedious precision dimensional tolerance proofreading works, saving much fabrication and installation labor and time and lowering the manufacturing cost.

BRIEF DESCRIPTION OF THE DRAWING

[0011] FIG. 1 is an oblique elevational view of a running belt of a tread base for treadmill in accordance with the present invention.

[0012] FIG. 2 is a side plain view of the running belt shown in FIG. 1.

[0013] FIG. 3 is an exploded view of the tread base frame unit and running belt of the tread base in accordance with the present invention.

[0014] FIG. 4 is an exploded view of the present invention, illustrating the tread base frame unit assembled with the front and rear belt wheel sets before mounting of the running belt.

[0015] FIG. 5 is an oblique elevational view of the tread base in accordance with the present invention.

[0016] FIG. 6 is a side plain view of the present invention, illustrating the running belt mounted around the main tread base frame of the tread base frame unit.

[0017] FIG. 7 is a schematic drawing of the present invention, illustrating the relationship between one slat and the respective movable sliding rollers in the respective sliding tracks.

[0018] FIG. 8 is a sectional end view of FIG. 7.

DETAILED DESCRIPTION OF THE INVENTION

[0019] Referring to FIGS. 1-8, a tread base for treadmill in accordance with the present invention is shown. The tread base comprises:

[0020] a tread base frame unit 1, comprising a main tread base frame 10 (see FIG. 3 and FIG. 4) for holding a front belt wheel set 2 and a rear belt wheel set 3 respectively at opposing front and rear sides thereof, a left bracket 12 and a right bracket 13 respectively affixed to opposing left and right sides of the main tread base frame 10 with fastening means or by welding.

[0021] a front belt wheel set 2 comprising a front wheel axle 21 (see FIG. 3 and FIG. 4) transversely pivotally mounted in the front side of the main tread base frame 10 and two front belt wheels 22 respectively mounted at opposing left and right ends of the front wheel axle 21,
[0022] a rear belt wheel set 3 comprising a rear wheel axle 31 (see FIG. 3 and FIG. 4) transversely pivotally mounted in the rear side of the main tread base frame 10 and two rear belt wheels 32 respectively mounted at opposing left and right ends of the rear wheel axle 31;

[0023] a running belt 4 (see FIGS. 1-4) comprising an endless wide band belt 41 mounted around the opposing front and rear sides of the main tread base frame 10, a plurality of slats 42 respectively fixedly arranged around an outer perimeter of the endless wide band belt 41 in a parallel manner at a predetermined pitch, and two endless narrow band belts 43 respectively fixedly fastened to an inner perimeter of the endless wide band belt 41 at opposing left and right sides and respectively coupled to the respective belt wheels 22, 32 of the front and rear belt sets 2.3 so that when a user runs on the slats 42 of the running belt 4, the endless wide band belt 41 and the endless narrow band belts 43 are forced to move and rotate the belt wheels 22, 32 of the front, rear belt wheel sets 2.3;

[0024] wherein:

[0025] the running belt 4 further comprises at least one movable sliding roller 44 mounted at each of opposing left and right ends of each slat 42 (see FIGS. 1-4 and FIG. 6);

[0026] the main tread base frame 10 of the tread base frame unit 1 comprises two sliding tracks 11 longitudinally arranged in parallel (see FIGS. 3-4 and FIGS. 7-8) with respective two opposite ends 112 thereof smoothly downwardly curving toward a respective lowest middle point 111 to exhibit a smoothly arched profile for supporting and guiding the movable sliding rollers 44 of the running belt 4 to enhance running stability.

[0027] Preferably, the running belt 4 further comprises a plurality of pivot blocks 45 respectively mounted at the opposing left and right ends of the slats 42 to support the respective movable sliding rollers 44.

[0028] Thus, when a user runs on the slats 42 of the running belt 4 to move the endless wide band belt 41 and the endless narrow band belts 43 and to rotate the belt wheels 22, 32 of the front, rear belt wheel sets 2.3, the movable sliding rollers 44 are rotated along the respective sliding track 11 of the tread base frame unit 1, enhancing the stability of the movement of the running belt 4. At the same time, the impact force produced during running of the user is distributed through the movable sliding rollers 44 of the running belt 4 to the sliding tracks 11 of the tread base frame unit 1, preventing breaking of the slats 42 of the running belt 4, avoiding danger and prolonging the lifespan of the tread base. Further, the fabrication and installation of the movable sliding rollers 44 and the sliding tracks 11 are simple and convenient without tedious precision dimensional tolerance proofreading works, saving much fabrication and installation labor and time and lowering the manufacturing cost.

[0029] In general, the invention achieves the effects as follows:

[0030] 1. The sliding tracks 11 are smoothly arched to support and guide the movable sliding rollers 44 during movement of the running belt 4, enhancing the moving stability of the running belt 4.

[0031] 2. The impact force produced during running of the user can be distributed through the movable sliding rollers 44 of the running belt 4 to the sliding tracks 11 of the tread base frame unit 1, preventing breaking of the slats 42 of the running belt 4, avoiding danger and prolonging the lifespan of the tread base, further, the fabrication and installation of the movable sliding rollers 44 and the sliding tracks 11 are simple and convenient without tedious precision dimensional tolerance proofreading works, saving much fabrication and installation labor and time and lowering the manufacturing cost.

What is claimed is:

1. A treadmill base comprising:
   a. a main tread base frame unit comprising a main tread base frame for holding a front belt wheel set and a rear belt wheel set respectively at opposing front and rear sides thereof, and a left bracket and a right bracket respectively affixed to opposing left and right sides of said main tread base frame;
   b. a front belt wheel set comprising a front wheel axle transversely pivotally mounted in the front side of said main tread base frame and two front belt wheels respectively mounted at opposing left and right ends of said front wheel axle;
   c. a rear belt wheel set comprising a rear wheel axle transversely pivotally mounted in the rear side of said main tread base frame and two rear belt wheels respectively mounted at opposing left and right ends of said rear wheel axle;
   d. a running belt comprising an endless wide band belt mounted around the opposing front and rear sides of said main tread base frame and two rear belt wheels respectively mounted at opposing left and right ends of said rear wheel axle;
   e. a running belt further comprises at least one movable sliding roller mounted at each of opposing left and right ends of each said slat;
   f. a main tread base frame unit comprises two sliding tracks longitudinally arranged in parallel for supporting and guiding said movable sliding rollers of said running belt.

2. The treadmill base as claimed in claim 1, wherein each said sliding track has two opposite ends thereof smoothly downwardly curving toward a middle point thereof to exhibit a smoothly arched profile.

3. The treadmill base as claimed in claim 1, wherein said running belt further comprises a plurality of pivot blocks respectively mounted at the respective opposing left and right ends of said slats to support the respective said movable sliding rollers.

4. A tread base for treadmill, comprising:
   a. a tread base frame unit having a front side and a rear side opposite to said front side;
   b. a front belt wheel set comprising a front wheel axle transversely pivotally mounted in the front side of said main tread base frame and two front belt wheels respectively mounted at opposing left and right ends of said front wheel axle;
   c. a rear belt wheel set comprising a rear wheel axle transversely pivotally mounted in the rear side of said main tread base frame and two rear belt wheels respectively mounted at opposing left and right ends of said rear wheel axle;
a running belt comprising an endless wide band belt mounted around the opposing front and rear sides of said main tread base frame, a plurality of slats respectively fixedly arranged around an outer perimeter of said endless wide band belt in a parallel manner at a predetermined pitch, and two endless narrow band belts respectively fixedly fastened to an inner perimeter of said endless wide band belt at opposing left and right sides and respectively coupled to the respective said belt wheels of said front belt wheel set and said rear belt wheel sets;

wherein:
said running belt further comprises at least one movable sliding roller mounted at each of opposing left and right ends of each said slat;
said tread base frame unit comprises two sliding tracks longitudinally arranged in parallel for supporting and guiding said movable sliding rollers of said running belt.

5. The tread base for treadmill as claimed in claim 4, wherein each said sliding track has two opposite ends thereof smoothly downwardly curving toward a middle point thereof to exhibit a smoothly arched profile.

6. The tread base for treadmill as claimed in claim 4, wherein said running belt further comprises a plurality of pivot blocks respectively mounted at the respective opposing left and right ends of said slats to support the respective said movable sliding rollers.

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