SAFETY DEVICE FOR TREADMILLS

Inventor: Kuo-Wu Hao, Taichung City (TW)

Correspondence Address:
ROSENBERG, KLEIN & LEE
3458 ELICOTT CENTER DRIVE-SUITE 101
ELICOTT CITY, MD 21043 (US)

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ABSTRACT
A safety device of a treadmill comprise a belt wrapped on user's body and having a cable with an engaging pad connected thereto. The engaging pad includes a first terminal electrically connected to a circuit of the control panel of the treadmill and a second terminal in the control panel. A magnet is received in the engaging pad and attracts a magnetically conductive member in the control panel so as to position the engaging pad. A piece movably extends through a through hole in the magnetically conductive member and a positioning hole defined through the control panel, and is pressed by the engaging pad. A switch is located in the control panel and the piece pushed an arm of the switch. The piece moves upward to release the arm of the switch to shut off the treadmill when the user falls and pulls the engaging pad away from the control panel.
SAFETY DEVICE FOR TREADMILLS

FIELD OF THE INVENTION

[0001] The present invention relates to a safety device connected between the user and the control panel of a treadmill, the power of the treadmill is cut off when the user falls or moves off the treadmill.

BACKGROUND OF THE INVENTION

[0002] A conventional treadmill generally includes a base with a running belt which is driven by a motor and an upright portion to which a panel is connected. The panel includes several control buttons so that the user may adjust the angle of the base relative to the floor and set the speed of the running belt. An emergency button usually made to be a red button is located on the panel and the user may touch the red button to shut off the power of the treadmill when in emergent situation such as the user feel dizzy, or has physical problem and cannot proceed to continue the running action. If the running belt cannot be stopped immediately, the user could be injured and fall down from the running belt. Some treadmill has a pulse detection means installed to the handles on the upright portion and the pulse detection means tells the times of heart beat of the user. However, this is operated by holding the handles and this is not convenient and not comfortable for the user to run on the running belt.

[0003] The present invention intends to provide a safety device of a treadmill and includes a belt wrapped on the user’s body and a wire with an engaging pad is connected to the control panel, the engaging pad can be disengaged from the panel so as to shut off the power of the treadmill.

SUMMARY OF THE INVENTION

[0004] The present invention relates to a safety device of a treadmill and the device comprises a belt for being wrapped to the user’s body and an engaging pad is connected to a distal end of the cable which extends from the belt. The engaging pad includes a body with a magnet connected thereto so as to attract a magnetically conductive member located in the control panel. A first box is connected to the body and includes first wires which are connected to a circuit of the control panel. A second box is received in the control panel of the treadmill and is removable and electrically connected to the first box.

[0005] A through hole is defined through the magnetically conductive member and a piece movably extends through the through hole of the magnetically conductive member and a positioning hole defined through the control panel. The piece is pressed by the body and presses an arm of a switch to normally activate the switch.

[0006] 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

[0007] FIG. 1 is an exploded view to show and a treadmill and the belt of the safety device of the present invention;

[0008] FIG. 2 is an exploded view to show the safety device of the present invention;

[0009] FIGS. 3A to 3C show the continuous actions of the disengagement between the engaging pad of the safety device and the control panel;

[0010] FIG. 4A shows another embodiment of the safety device of the present invention;

[0011] FIG. 4B shows the switch arm is not pressed when the engaging is removed from the control panel of the embodiment in FIG. 4A;

[0012] FIG. 5 shows another embodiment of the belt of the safety device of the present invention, and

[0013] FIG. 6 shows a user using the safety device to use the treadmill.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] Referring to FIGS. 1, 2 and 3A, the safety device “A” of the present invention comprises a belt 30 which has connection portions 32 such as Velcro strips located at two ends of the belt 30 so that the belt 30 can be easily wrapped to the user’s body as shown in FIG. 6. The belt 30 includes a control part 31 and a cable 25 is electrically extended from the control part 31 such that the user may operate the buttons on the control part 31 to control the modes of the treadmill “B”. Two pulse detection pads 33 may be connected to an inside of the belt 30 if the belt 30 is used on the upper body of the user to detect the pulse. An engaging pad 20 is connected to a distal end of the cable 25 and includes a body 21 and a top cover 23 which includes a ridge 231 extending from a top thereof so that the user may hold the ridge 231 to position the engaging pad 20. The body 21 includes a magnet 22 received in a hole 211 in the body 21 and a first box 24 is clamped between two ridges 212 which extend in parallel from a top of the body 21. The first box 24 includes first wires 241 extending therefrom and electrically connected to the cable 25. A plurality of first contact points 242 extend through first apertures 243 defined through a wall of the first box 24. The engaging pad 20 is movably connected to a recessed area 11 defined in a top of the control panel 10 of the treadmill “B”. The treadmill “B” includes a base with a running belt and the control panel 10 is connected to a top of an upright portion connected to the base.

[0015] A second box 15 is received in the control panel 10 of the treadmill “B” and includes second contact points 152 so as to removable and electrically contact the first contact points 242 of the first box 24 via slots 112 defined through the top of the control panel 10 and slots 213 defined through the body 21. The second box 15 includes second wires 151 which are connected to the circuit of the control panel 10 and a switch 14.

[0016] A magnetically conductive member 12 is engaged with a recess 113 defined in an underside of a top surface of the control panel 10 and attracted by the magnet 22 so that the engaging pad 20 is positioned to the control panel 10. A through hole 121 is defined through the magnetically conductive member 12 and a piece 13 movably extends through the through hole 121 of the magnetically conductive member 12 and a positioning hole 111 defined through the control panel 10. The piece 13 is pressed by the body 21. The switch
14 is located in the control panel 10 and includes an arm which is pressed by the piece 13 when the engaging pad 20 is engaged with the recessed area 11 of the control panel 10.

[0017] As shown in FIGS. 3B and 3C, if the user is suffered an emergency condition and falls down from the running belt, the engaging pad 20 is pulled by the user and disengaged from the control panel 10. The piece 13 is no longer pressed by the body 21 of the engaging pad 20 and the arm of the switch 14 is released so as to cut off the circuit of the treadmill “B”. By this way, because the running belt stops at the beginning of the user’s fall, the user is prevented from being injured seriously.

[0018] FIGS. 4A and 4B show that the first box in the first embodiment in FIG. 2 is replaced with a first terminal 26 and first wires 261 extend from the first terminal 26 and are connected to the cable 25. The engaging pad 20 is movably engaged with the recessed area 11 of the control panel 10. The second box in the first embodiment in FIG. 2 is replaced with a second terminal 26 A second terminal 15 is received in the control panel 10 of the treadmill “B” and is electrically connected to the circuit of the control panel 1. As shown in FIG. 5, the belt 30 may have two pulse detection pads 33 connected to an inside of the belt 30 so that when the belt 30 is wrapped to the upper body of the user, the user’s pulse can be detected. Two buckles are respectively connected to a strip and connected to two ends of the belt 30.

[0019] 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. A safety device of a treadmill which includes a base with a running belt and a control panel connected to a top of an upright portion connected to the base, the safety device comprising:
   a belt;
   an engaging pad connected to a distal end of the cable and including a body with a magnet connected thereto, a first box connected to the body and electrically connected to the cable, the engaging pad movably connected to the control panel;
   a second box adapted to be received in the control panel of the treadmill and removably and electrically connected to the first box, the second box electrically connected to a circuit of the control panel;
   a magnetically conductive member adapted to be located at the control panel and being attracted by the magnet, a through hole defined through the magnetically conductive member and a piece movably extending through the through hole of the magnetically conduc-
   tive member and adapted to extend through a positioning hole defined through the control panel, the piece being pressed by the body, and
   a switch adapted to be located in the control panel and the piece pushed an arm of the switch.

2. The device as claimed in claim 1, wherein the belt includes a control part electrically connected to the cable.

3. The device as claimed in claim 1, wherein the body has two ridges extending in parallel from a top thereof and the first box is clamped between the two ridges.

4. The device as claimed in claim 1, wherein the first box includes a plurality of first contact points extending through first apertures defined through a wall of the first box, the second box including a plurality of second contact points, a plurality of slots defined through the body and the first and second contact points being in contact with each other via the slots.

5. The device as claimed in claim 1, wherein a cover is mounted to the body and has a ridge extending from a top thereof.

6. The devices as claimed in claim 1 further comprising two pulse detection pads connected to an inside of the belt.

7. A safety device of a treadmill which includes a base with a running belt and a control panel connected to a top of an upright portion connected to the base, the safety device comprising:
   a belt;
   an engaging pad connected to a distal end of the cable and including a body with a magnet connected thereto, a first terminal connected to the body and electrically connected to the cable, the engaging pad movably connected to the control panel;
   a second terminal adapted to be received in the control panel of the treadmill and being electrically connected to the first terminal, the second terminal adapted to be connected to a circuit of the control panel;
   a magnetically conductive member adapted to be located at the control panel and being attracted by the magnet, a through hole defined through the magnetically conductive member and a piece movably extending through the hole of the magnetically conductive member and adapted to extend through a positioning hole defined through the control panel, the piece being pressed by the body, and
   a switch adapted to be located in the control panel and the piece pushed an arm of the switch.

8. The device as claimed in claim 7, wherein the belt includes a control part electrically connected to the cable.

9. The devices as claimed in claim 7 further comprising two pulse detection pads connected to an inside of the belt.

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