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(54)

Gymnastic machine

(57)

A gymnastic machine comprising a frame (2), at least a motor (3) connected to the frame (2) to move at least an exercise interface (4) suitable to interact with a user for the execution of a cardiovascular exercise, at least a control panel (5) comprising control devices (6), which can be chosen by a user and are associated with the motor (3) so as to actuate the movement of the exercise interface (4) to start the physical exercise, **characterised in that** the control panel (5) can be blocked so as to bring the gymnastic machine from a training configuration, wherein it is possible to actuate the movement of the exercise interface (4) through the respective control devices (6), to a safety configuration, wherein any selection of the respective control devices (6) does not actuate the movement of the exercise interface (4).

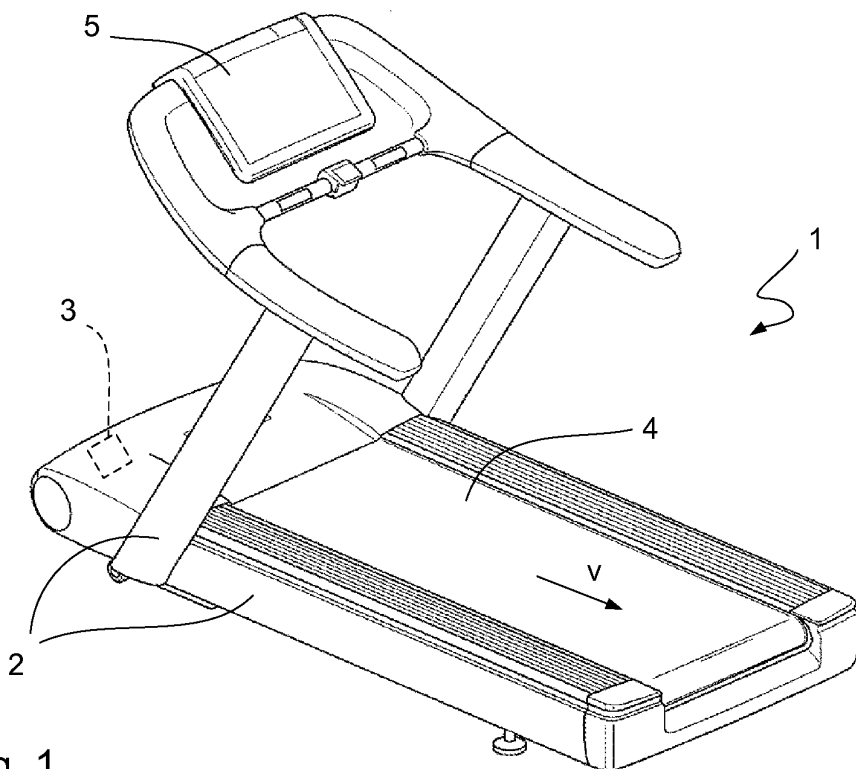


Fig. 1

Description

[0001] The present invention relates to a gymnastic machine for performing an exercise for cardiovascular training, usually known as treadmill. In particular, the present invention relates to an improved gymnastic machine, safe also for the domestic use.

[0002] Treadmills are gymnastic machines allowing a user to perform walking and/or running activity by maintaining the same position, as they comprise a support table associated with the frame of the machine, on which superiorly slides a conveyor belt with adjustable speed, which constitutes the surface for running and/or walking. The treadmill further comprises two cross rollers, one front and one rear roller, associated with the frame, around which the belt winds, closing on itself below the table. One of the two rollers is motorised, so as to put the belt into rotation.

[0003] The gymnastic machines of this type known nowadays present numerous drawbacks.

[0004] Actually, the treadmills can be very dangerous, as the surface of the moving belt can cause dragging of the user and consequently risky and headlong falls from the gymnastic machine. The danger increases when the user is not very skilled, careless, not sufficiently concentrated on the performed activity, or if the user is a child, not aware of the risks linked with the functioning of the gymnastic machine.

[0005] The object of the present invention is therefore to overcome these drawbacks, by providing a gymnastic machine, which is safe and does not constitute a danger, in particular, for a child moving towards and getting on it.

[0006] According to the present invention, this object is achieved through a gymnastic machine comprising a frame, at least a motor connected to the frame to move at least an exercise surface suitable to interact with a user for the execution of a cardiovascular exercise, at least a control panel comprising control devices, which can be chosen by a user and are associated with the motor so as to actuate the movement of the exercise surface to start the physical exercise, **characterised in that** the control panel can be blocked so as to bring the gymnastic machine from a training configuration, wherein it is possible to actuate the movement of the exercise surface through the respective control devices, to a safety configuration, wherein any selection of the respective control devices does not actuate the movement of the exercise surface.

[0007] The technical features of the invention, according to the above mentioned scopes, are clearly apparent from the attached claims, and the advantages of the invention will be more apparent in the following detailed description, made with reference to the attached drawings, which represent a non limiting example of embodiment thereof, wherein:

- figure 1 shows a perspective view of a gymnastic machine according to the present invention;

- figure 2 schematically shows the main components of a gymnastic machine according to the present invention.

[0008] According to the attached drawings, and with particular reference to figures 1 and 2, number 1 indicates a gymnastic machine for performing a physical exercise for cardiovascular training, of the type commonly known as "treadmill".

[0009] The gymnastic machine 1 comprises a frame 2, at least a motor 3 connected to the frame 2 and contained inside the front protective shield of the machine, and therefore not visible in figure 1. The architecture of this type of gymnastic machine is well known and it will not therefore further explained below. In order to illustrate the present invention, it is particularly interesting that the motor 3 sets at least an exercise interface 4 in motion, for example an exercise surface 4, suitable to interact with a user for performing the cardiovascular exercise. Furthermore, on the gymnastic machine 1 a control panel 5 is provided, which comprises control devices 6, which can be selected by a user and are associated to the motor 3 in order to actuate the movement of the exercise surface 4 to start the physical exercise.

[0010] In more detail, as illustrated in figure 2, the control devices 6 of the control panel 5 comprise a plurality of controls 8, which allow a user to perform numerous operations, among which in the following the main are indicated just by way of example: to start the physical exercise through the button "START", to modify the speed of the exercise surface 4 through the buttons "+" and "-" and to insert personal data, such as weight and age, through the numeric keys.

[0011] Advantageously, the control panel 5 can be blocked so as to bring the gymnastic machine from a training configuration, wherein it is possible to actuate the movement of the exercise surface 4 by means of the control devices 6, to a safety configuration, wherein any selection of the control devices 6 does not actuate the movement of the exercise surface 4.

[0012] In more detail, the gymnastic machine according to the present invention adequately comprises at least a control unit 7, which can be programmed to send control signals to the motor 3 coming from the control devices 6, based upon the selected controls 8. Obviously, the more evolved control panels comprise much more controls than those represented in figure 2, which allow, for example, to select preset training programs, with the possibility to set different goals such as the calorie consumption, the distance to be covered etcetera. Once the desired training program has been selected through the control devices 6, the control unit 7 sends control signals to the motor 3 based upon the programs stored in it.

[0013] Advantageously, in the safety configuration the control unit 7 is suitable to block the transmission of control signals to the motor 3. This goal is achieved by adequately programming the control unit 7, so that it detects when the gymnastic machine 1 is in the safety configuration.

ration and therefore it does not send control signals to the motor, so as not to actuate the movement of the exercise surface 4.

[0014] Advantageously, the control panel 5 is suitable to block itself automatically if the exercise surface 4 is still and if the control devices 6 are not selected by the user for a preset time interval, so as to bring the gymnastic machine in the safety configuration, wherein, as explained above, the selection of the control devices 6 does not actuate the movement of the exercise surface 4. The preset time interval can be set by the user according to his/her needs.

[0015] As mentioned above, the control devices 6 comprise a plurality of controls 8 which can be selected by the user and, favourably, the control panel 5 can be selectively blocked manually through the continuous pressure for a given time period on at least a control of the plurality of controls 8, preset by the user. This time period can be defined by the user according to his/her needs.

[0016] Alternatively, the control panel 5 can be selectively blocked manually by pressing in fast sequence or in a quite simultaneous manner at least two controls of the plurality of controls 8, preset by the user.

[0017] According to a further advantageous alternative, the control panel 5 can be selectively blocked manually by pressing a preset sequence of at least two controls of the plurality of controls 8, defining a security code.

[0018] Conveniently, once the gymnastic machine is in the safety configuration, the control panel 5 can be selectively unlocked manually by pressing continuously for a given time period at least a control of the plurality of controls 8, preset by the user, so as to bring the gymnastic machine in a training configuration, wherein it is possible to actuate the movement of the exercise surface 4 through the control devices 6 and thus to start the physical exercise of cardiovascular training.

[0019] Alternatively, the control panel 5 can be selectively unlocked manually by pressing in fast sequence or in a quite simultaneous manner at least two controls of the plurality of controls 8, preset by the user, so as to put the gymnastic machine in the above mentioned training configuration.

[0020] A further advantageous alternative provides for the control panel 5 to be selectively unlocked manually by pressing a preset sequence of at least two controls of the plurality of controls 8, defining a security code, so as to put the gymnastic machine in the training configuration.

[0021] Obviously, by adequately programming the control unit 7, the user can customise and, if necessary, modify the way through which the gymnastic machine varies its configuration, from the safety configuration to the training one and vice versa, by choosing the preferred blocking and unlocking operation of the control panel.

[0022] The control panel 5 furthermore comprises at least a displaying unit 9 to display the operation parameters of the gymnastic machine during the execution of the physical exercise in the training configuration, such

as for example the speed at which the exercise surface 4 runs during the training, symbolically indicated with the letter "v", the time, indicated with "t", and the distance covered from the beginning of the exercise. Advantageously, at least a displaying unit 9 allows to display when the gymnastic machine is in the safety configuration, for example through a text message of the type "SAFETY BLOCK" or "LOCKED", as shown in figure 2, which schematically illustrates the main components of a gymnastic machine according to the present invention in the safety configuration. In this way the user has the certainty to leave the gymnastic machine in the safety configuration and, if he/she wants instead to start the physical exercise, he/she knows that he/she must perform the necessary unlocking operations to bring the machine in the training configuration.

[0023] The control panel 5 can be of the type with buttons or it can be a touch screen; in the first case, the control devices 6 are constituted by a plurality of selectable buttons 8, whilst in the second case they are constituted by a plurality of delimited and selectable areas 8 of the control panel.

[0024] It should be noted that the terms "pressure on the controls" or "press the controls", used above, indicate the real pressure on the button controls in the case of control panels with buttons, whilst in the case of control panels of the touch-screen type they indicate the simple touch of the selectable areas of the control panel.

[0025] For the sake of completeness of the description, an example of operation of the gymnastic machine according to the present invention is illustrated below. If the user mounts the gymnastic machine and presses the control "START", the control unit verifies whether the gymnastic machine is in the training or in the safety configuration and, in the first case, sends control signals to the motor 3 according to the controls 8 that the user selects from the control panel 5 to start the physical exercise. In the case in which the gymnastic machine is in the safety configuration, which can be displayed for example through a text message by means of a displaying unit 9 of the type "SAFETY BLOCK", the control unit verifies whether the user selects the controls 8 so as to perform the operation of unlocking the control panel previously set by the user, for example by pushing the button "START" for 8 seconds. If this occurs, a text message can be displayed through a respective displaying unit 9 of the type "INACTIVE BLOCK", which indicates to the user the unlock of the control panel 5, and the control unit sends control signals to the motor 3 according to the controls 8 that the user selects from the control panel to start the physical exercise. Vice versa, if the user does not select the controls 8 so as to perform the operation of unlocking the control panel 5, the gymnastic machine remains in the safety configuration and the message "SAFETY BLOCK" remains, which indicates to the user that it is necessary, to perform the exercise, to unlock the control panel 5.

[0026] It should be added that, at the end of the phys-

ical exercise of cardiovascular training, the exercise surface 4 stops and the user goes down from the gymnastic machine. Consequently, no control of the plurality of controls 8 of the control panel 5 is selected, and in the case in which the control unit has been programmed in an adequately manner, after a preset time interval, for example 1 minute, the control unit can automatically bring the gymnastic machine in the safety configuration.

[0027] Lastly, it should be underlined that the reference to a gymnastic machine of the type of figure 1 is not limiting, and, obviously, the present invention can be applied to any gymnastic machine comprising a movable part, which can be assimilated to the exercise surface 4, moved through the selection, made by the user, of control devices of a control panel.

[0028] It has been described how the present invention achieves the provided objects and scopes.

[0029] The gymnastic machine according to the present invention is safe and it can be left unattended without dangers for people who have never used it and who could unintentionally press controls of the control panel. Furthermore, the gymnastic machine does not represent a danger for a child moving towards it and pressing unintentionally controls of the control panel.

[0030] The invention is therefore provided with industrial applicability; modifications and variants can be further applied to it, without departing from the protective scope of the present invention; furthermore, all the details can be replaced with technically equivalent elements.

Claims

1. A gymnastic machine comprising a frame (2); at least a motor (3) connected to the frame (2) for movement of at least an exercise interface (4) suitable to interact with a user for performing a physical exercise; at least a control panel (5) provided with actuating means (6), comprising a plurality of commands (8), which can be selected by a user and are associated with said motor (3) to actuate the movement of said exercise interface (4) in order to start the physical exercise; said control panel (5) being selectively lockable in such a way so as to bring the gymnastic machine from a training configuration, wherein it is possible to actuate the movement of said exercise interface (4) through said actuating means (6), to a safety configuration, wherein a selection of said actuating means (6) does not actuate the movement of said exercise interface (4); **characterised in that** said control panel (5) can be manually locked by pressing at least two given said commands (8) in a rapid succession or in a substantially simultaneous manner, or by pressing a preset sequence of at least two given said commands (8) which define a security code.
2. A gymnastic machine according to claim 1, **characterised by** comprising at least a control unit (7) programmable in order to send to the motor (3) control signals coming from said actuating means (6); said control unit (7) being suitable to stop the transmission of said control signals to said motor (3) in the safety configuration.
3. A gymnastic machine according to claim 1 or 2, **characterised in that** said control panel (5) is suitable automatically to lock when said exercise interface (4) is immobile and when said actuating means (6) are not selected by the user for a preset time interval, in such a way so as to bring the gymnastic machine in a safety configuration wherein a selection of said actuating means (6) does not actuate the movement of said exercise interface (4).
4. A gymnastic machine according to any one of the previous claims, **characterised in that** said control panel (5) can be manually locked in a selective manner through the continuous pressure, for a given time period, of at least a given said command (8).
5. A gymnastic machine according to any one of the previous claims, **characterised in that** said control panel (5) can be manually unlocked in a selective manner through the continuous pressure, for a given time period, of at least a said command (8), preset by the user, in such a way so as to bring the gymnastic machine in a training configuration, wherein it is possible to actuate the movement of said exercise interface (4) through said actuating means (6).
6. A gymnastic machine according to any one of the previous claims, **characterised in that** said control panel (5) can be manually unlocked in a selective manner by pressing at least two given said commands (8) in a rapid succession or in a substantially simultaneous manner, in such a way so as to bring the gymnastic machine in a training configuration, wherein it is possible to actuate the movement of said exercise interface (4) through said actuating means (6).
7. A gymnastic machine according to any one of claims 1-6, **characterised in that** said control panel (5) can be manually unlocked in a selective manner by pressing a preset sequence of at least two said commands (8), defining a security code, in such a way so as to bring the gymnastic machine in a training configuration, wherein it is possible to actuate the movement of said exercise interface (4) through said actuating means (6).
8. A gymnastic machine according to any one of the previous claims, **characterised in that** said control panel (5) comprises display means (9) to display the

operational parameters of the gymnastic machine during the cardiovascular training in the training configuration and to display a respective safety status when the gymnastic machine is in the safety configuration.

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9. A gymnastic machine according to any one of the previous claims, **characterised in that** said control panel (5) is of the button type and **in that** each said command (8) comprise a respective button (8). 10
10. A gymnastic machine according to any one of claims 1-8, **characterised in that** said control panel (5) is of the touch-screen type and **in that** each said command (8) comprise a respective delimited and selectable area (8) of the control panel (5). 15
11. A gymnastic machine according to any one of the previous claims, **characterised in that** said exercise interface (4) comprises an exercise surface (4) actuated, in use, by said motor (3). 20

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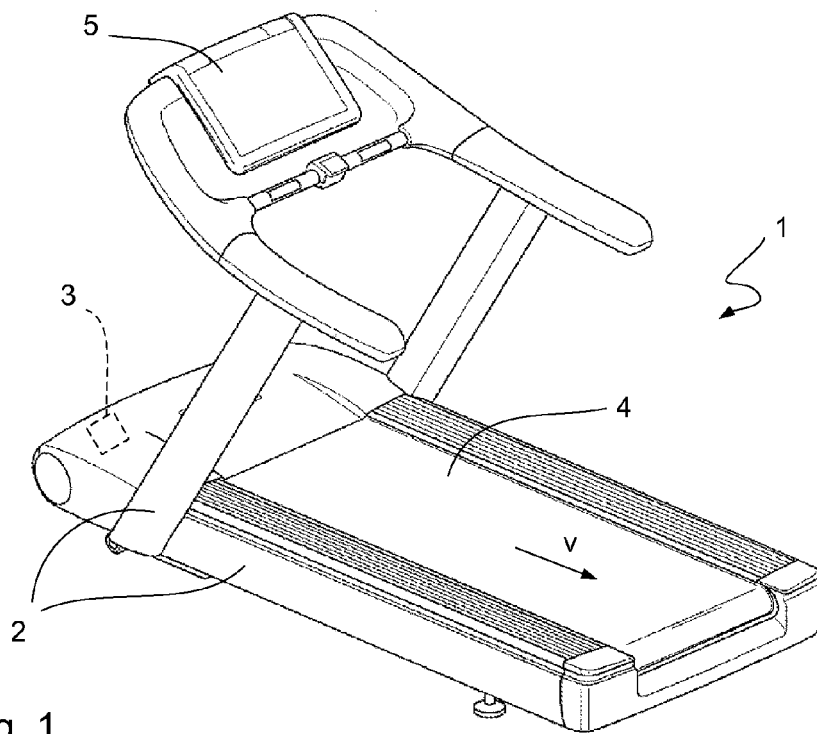


Fig. 1

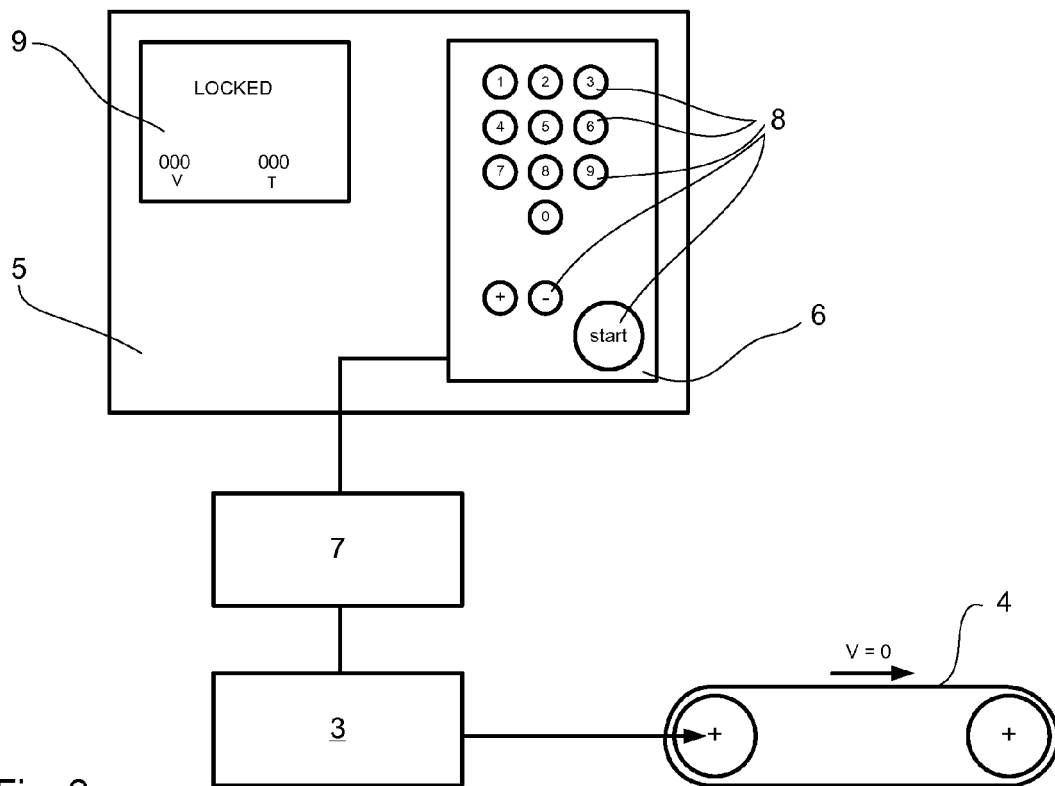


Fig. 2



EUROPEAN SEARCH REPORT

Application Number
EP 09 17 5321

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 91/07214 A (WALKER FITNESS SYSTEMS INC [US]) 30 May 1991 (1991-05-30) * page 16, line 30 - page 17, line 4; figures 1c,2,18b * * page 25, line 12 - line 14 * -----	1-11	INV. A63B22/02 A63B24/00
A	US 5 034 576 A (DALEBOUT WILLIAM T [US] ET AL) 23 July 1991 (1991-07-23) * column 2, line 8 - column 4, line 34; figures 1-9 * -----	1-11	
A	US 6 875 157 B1 (WANG LEAO [TW] ET AL) 5 April 2005 (2005-04-05) * column 2, line 14 - line 56; figures 1-4 * -----	1-11	
A	US 6 050 924 A (SHEA MICHAEL J [US]) 18 April 2000 (2000-04-18) * column 21, line 26 - column 28, line 35; figures 14a,15e * -----	1-11	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 January 2010	Examiner Jekabsons, Armands
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 17 5321

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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15-01-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9107214 A	30-05-1991	AU 7169091 A	13-06-1991
US 5034576 A	23-07-1991	NONE	
US 6875157 B1	05-04-2005	NONE	
US 6050924 A	18-04-2000	US 2009138488 A1	28-05-2009
		US 6659916 B1	09-12-2003
		US 6638198 B1	28-10-2003
		US 6497638 B1	24-12-2002
		US 6464618 B1	15-10-2002