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(54) SHOCK ABSORPTION MECHANISM FOR TREADMILL

(57) The invention provides a shock absorption mechanism for a treadmill. The shock absorption mechanism for a treadmill consists of a running platform, a base and rubber columns connecting the running platform and the base, wherein opposing magnets are respectively fixed below middle parts of two sides of the running platform and above middle parts of two sides of the base, and the magnets on the running platform and the magnets on the base have the same magnetic pole, thus forming a repulsive force for shock absorption. Such shock absorption mechanism has the advantages of no noise, a long service life, good comfort and the like when in use.

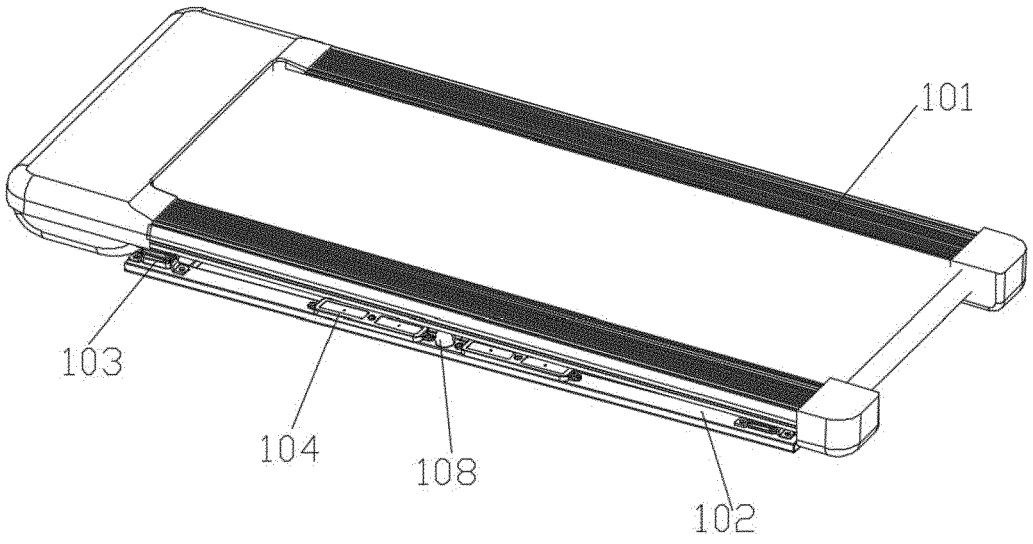

Fig. 1

EP 3 669 954 A1

Description

FIELD OF THE INVENTION

[0001] The invention provides a treadmill accessory and in particular relates to a shock absorption mechanism for a treadmill.

BACKGROUND OF THE INVENTION

[0002] A shock absorption mechanism is generally arranged between a running platform and a base of an existing treadmill so as to reduce noise and protect the knee joint of a user. An existing treadmill is generally provided with rubber columns below four corners of a rectangular running platform, and the running platform is fixed on a base by the rubber columns, while a middle part of the running platform is pressed against the base by several springs, thus providing a damping and buffering action. However, for the existing treadmills that provide shock absorption by springs, the running platforms of the treadmills compress the springs to cause squeak noise when in use, and the springs gradually lose elasticity after long-term use, thus the shock absorption effect is also gradually weakened.

SUMMARY OF THE INVENTION

[0003] In view of the defects of a shock absorption mechanism for an existing treadmill, a technical problem to be solved by the invention is to provide a shock absorption mechanism for a treadmill which has low noise and a long-term stable shock absorption effect.

[0004] In order to achieve the above object, according to one aspect of the invention, the invention is achieved by the following technical measures: the shock absorption mechanism comprises a running platform and a base, wherein the running platform is fixed on the base by rubber columns below its four corners, one or several opposing magnets are respectively fixed below middle parts of two sides of the running platform and above middle parts of two sides of the base, and the magnets on the running platform and the magnets on the base have the same magnetic pole to form a repulsive force.

[0005] The shock absorption mechanism for a treadmill achieves shock absorption by the repulsive force formed by the same magnetic pole of the magnets, thus avoiding noise and providing a stable shock absorption effect.

[0006] Further, preferably, the shock absorption mechanism for a treadmill further comprises a magnet frame, one side of the magnet frame is fixed to the running platform or the base, and the magnet frame is used for fixing the magnets. The above design facilitates fixing the magnets.

[0007] Further, preferably, the magnet frame is hollow inside, and an unfixed side of the magnet frame has an opening which allows part of accommodating cavities to be formed as through cavities. The above design is to facilitate the formation of a repulsive force between the magnets.

[0008] Further, preferably, the magnet frame is internally provided with a partition plate so that not fewer than two accommodating cavities are formed in the magnet frame, and each of the accommodating cavities is provided with a magnet. The above design is reasonable and compact in structure.

[0009] Further, preferably, a reinforcing rubber column is also fixed on the base, the reinforcing rubber column is hemispherical, and there is a certain gap between the reinforcing rubber column and the running platform to prevent the running platform from being pressed too low and provide support.

[0010] Compared with the prior art, the invention has the following advantages: the shock absorption mechanism using strong magnets for buffering has no noise, a long service life and good comfort when in use.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The drawings constituting a part of the invention are used to provide a further understanding of the invention, and illustrative embodiments and their illustrations of the invention are used for explaining the invention, but do not unduly limit the invention. In the Figures:

Fig. 1 is a schematic structural view of the invention; and

Fig. 2 is a schematic structural view of the magnet frame of the invention.

[0012] Description of reference numerals: 101. running platform; 102. base; 103. rubber column; 104. magnet frame; 105. opening; 106. partition plate; 107. magnet; 108. reinforcing rubber column.

DETAILED DESCRIPTION OF THE INVENTION

[0013] The invention will be described hereinafter in detail with reference to the drawings and in conjunction with examples. It should be noted that the examples in the present application and the features in the examples may be combined with each other if there is no confliction.

[0014] In the description of the invention, it should be understood that the directional or positional relationships indicated by the terms such as "center", "upper", "lower", "left", "right", "vertical", "horizontal", "inner", "outer", "bottom" and "top" are based on the directional or positional relationships shown in the drawings, which are merely for the convenience of describing the invention and for simplified description, and are not intended to indicate or imply that the devices or elements involved must have specific orientations and must be constructed and operated in specific orientations, and therefore cannot be construed as limiting the invention.

Embodiment 1

[0015] Referring to Fig. 1, a shock absorption mechanism for a treadmill provided by this embodiment comprises a running platform 101, a base 102 and rubber columns 103, wherein the rubber columns 103 are four rubber columns which are respectively disposed at the bottom of four corners of the running platform 101 and used for being fixed to the base 102.

[0016] Referring to Fig. 2, two magnet frames 104 are fixed at a middle part of each side of the running platform 101, and two magnet frames 104 are fixed at a middle part of each side of the base 102, thus forming four sets of magnet frames 104 which are vertically opposite to one another in pairs; an opening at one side of the magnet frame 104 is hollow inside to form an accommodating cavity therein, a partition plate 106 is fixed in the accommodating cavity to form two cavities in the accommodating cavity, magnets 107 are respectively fixed in the two cavities, and the magnet frame 104 at the opening side is preferably movably fixed at the bottom of the running platform 101 or at the top of the base 102 by screws; an unfixed side of the magnet frame 104 has an opening 105 which allows part of accommodating cavities to be formed as through cavities, so that the magnets 107 are not completely surrounded by the magnet frame 104; and the magnets 107 on the running platform 101 are opposite to the magnets 107 on the base 102, thus forming a repulsive force for shock absorption if the magnets 107 on the running platform 101 and the magnets 107 on the base 102 have the same magnetic pole. Of course, it can be seen from Fig. 2 that a reinforcing rubber column 108 is also fixed on the base 102 between the two magnet frames 104 at the middle part of each side of the base 102, the reinforcing rubber column 108 is hemispherical, and the top of the reinforcing rubber column 108 is higher than the magnet frames 104, but there is a certain gap between its top and the running platform 101.

[0017] Since strong magnets with the same magnetic pole are used for buffering between the middle part of the running platform and the base in the above design, the shock absorption mechanism has the advantages of no noise, a long service life, good comfort and the like when in use. Moreover, in the shock absorption mechanism for a treadmill, a hemispherical reinforcing rubber column is fixed between the two magnet frames of the base, which prevents the running platform from being pressed too low and provides support when an overweight user is using the running platform, thus effectively protecting the running platform.

[0018] Of course, the magnets 107 may be either strong magnets or electromagnets.

[0019] The above description only refers to a preferred embodiment of the invention and is not intended to limit the invention. For those skilled in the art, various modifications and changes can be made to the invention. Any modification, equivalent replacement and improvement, etc. made within the spirit and principle of the invention shall be included within the protection scope of the invention.

Claims

1. A shock absorption mechanism for a treadmill, comprising: a running platform and a base, the running platform being fixed on the base by rubber columns below its four corners, wherein one or several opposing magnets are respectively fixed below middle parts of two sides of the running platform and above middle parts of two sides of the base, and the magnets on the running platform and the magnets on the base have the same magnetic pole to form a repulsive force.

2. The shock absorption mechanism for a treadmill according to claim 1, wherein the shock absorption mechanism for a treadmill further comprises a magnet frame, one side of the magnet frame is fixed to the running platform or the base, and the magnet frame is used for fixing the magnets.

3. The shock absorption mechanism for a treadmill according to claim 2, wherein the magnet frame is hollow inside, and an unfixed side of the magnet frame has an opening which allows part of accommodating cavities to be formed as through cavities.

4. The shock absorption mechanism for a treadmill according to claim 2 or 3, wherein the magnet frame is internally provided with a partition plate so that not fewer than two accommodating cavities are formed in the magnet frame, and each of the accommodating cavities is provided with a magnet.

5. The shock absorption mechanism for a treadmill according to claim 1, wherein a reinforcing rubber column is also fixed on the base, the reinforcing rubber column is hemispherical, and there is a certain gap between the reinforcing rubber column and the running platform to prevent the running platform from being pressed too low and provide support.

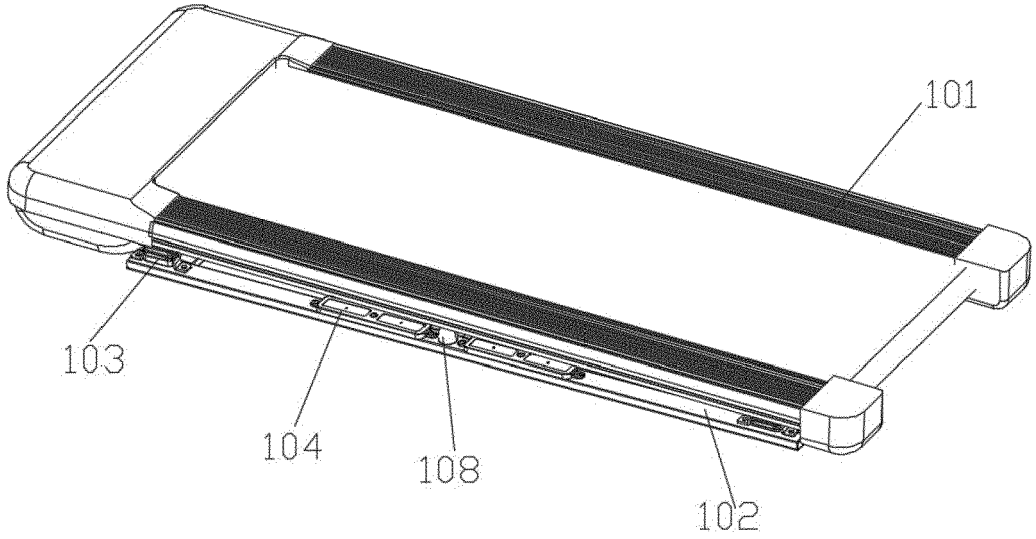

Fig. 1

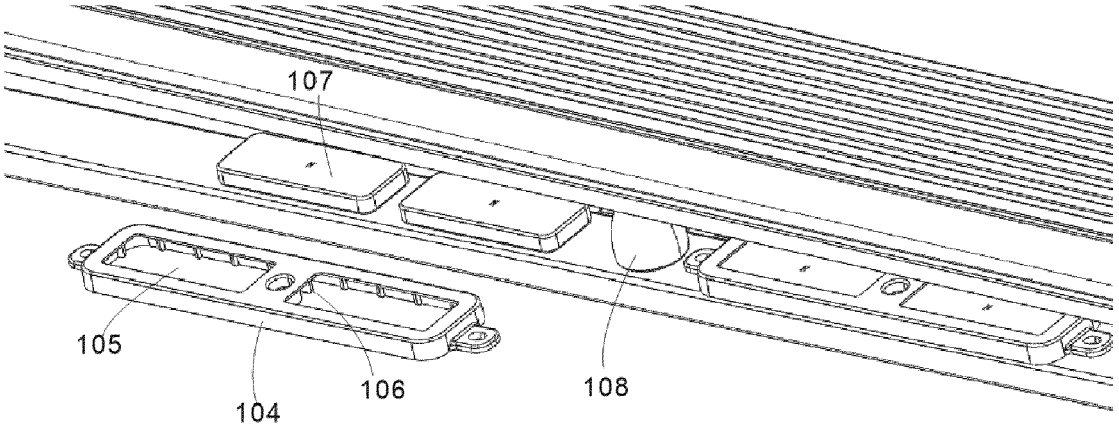

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 19 16 3327

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 02/068066 A1 (TECHNOGYM SPA [IT]; ALESSANDRI NERIO [IT]; FABBRI GIANMATTEO [IT]) 6 September 2002 (2002-09-06) * page 5, lines 31-36; figure 8 * * page 7, lines 26-32 *	1-5	INV. A63B22/02
X	CN 107 401 579 A (NINGBO YILI SHOCK ABSORBER CO LTD) 28 November 2017 (2017-11-28) * the whole document *	1-5	

TECHNICAL FIELDS SEARCHED (IPC)

A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	30 September 2019	Squeri, Michele

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
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 19 16 3327

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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30-09-2019

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82