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(54) TREADMILL BASE AND METHOD FOR MOUNTING RUNNING BELT

(57) A treadmill base includes an integrally formed base body, and the base body is disposed with a first hole for a running belt to pass through to be wound on a running board, and a main notch that is communicated with the first hole and configured for the running belt to pass through during mounting. The base body is designed to be integrally formed, and the main notch for the running belt to pass through during mounting is disposed on the base body to facilitate the mounting of the running belt. Two separated parts at the main notch are connected by a connecting piece after the running belt is mounted to ensure the strength of the parts at the position. The treadmill base has a simple structure and convenient operation, greatly improves assembly efficiency and reduces production costs.

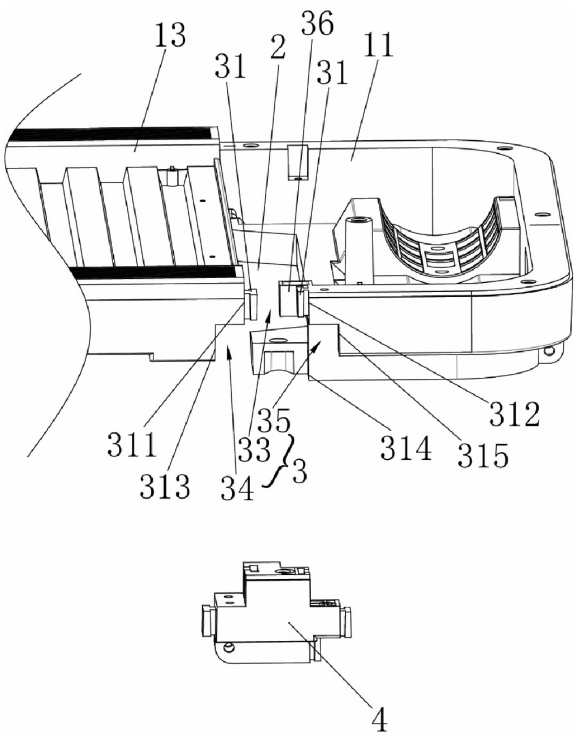


FIG. 6

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Description

TECHNICAL FIELD

[0001] The present invention relates to the technical field of treadmills, and particularly, to a treadmill base and a method for mounting a running belt.

BACKGROUND

[0002] A common existing treadmill bottom frame is usually assembled from metal pipes, as shown in FIG. 1 of Treadmill disclosed in the published patent document CN108452481B. The treadmill includes side pipes on left and right sides and a front pipe arranged at a front end, and then components such as a treadmill running board, a treadmill head shell, a treadmill bottom frame and treadmill pedals need to be mounted, resulting in many mounting processes and low mounting efficiency.

[0003] Based on the above situation, the concept of integral forming of components is proposed in the industry, such as the published patent document CN212282686U, in which an upper shell and a lower shell are integrally formed respectively to reduce mounting processes. However, considering the mounting of a running belt, a running board still needs to be separated from the shell, the running belt is wound on the running board and then the running board is fixed on the shell, while the mounting of the running board is troublesome with many fixing points.

SUMMARY

[0004] The present invention provides a treadmill base and a method for mounting a running belt aiming at the defects in the existing technologies. The base body is designed to be integrally formed, and a treadmill can be quickly assembled only by mounting a driving motor, an electronic control unit, front and rear rollers and a running belt, so that mounting processes are simplified and mounting efficiency is improved. In a further design scheme, a main notch for the running belt to pass through during mounting is formed on the base body to facilitate the mounting of the running belt, and two separated parts at the main notch are connected by a connecting piece after the running belt is mounted to ensure the strength of the parts at the position.

[0005] To solve the above technical problems, the present invention is achieved through the following technical solutions:

A treadmill base includes an integrally formed base body, the base body being disposed with a first hole for a running belt to pass through to be wound on a running board.

[0006] In the above technical solution, preferably, the base body further includes a main notch that is communicated with the first hole and configured for the running belt to pass through during mounting.

[0007] In the above technical solution, preferably, the base body includes an integrally formed treadmill head shell, a running board and two pedals arranged on left and right sides of the running board.

[0008] In the above technical solution, preferably, a connecting piece is assembled at the main notch to form a connection between two ends of the main notch.

[0009] In the above technical solution, preferably, the connecting piece is detachably mounted at the main notch.

[0010] In the above technical solution, preferably, the base body is arranged with a plurality of first fitting heads and/or a plurality of first fitting grooves at the main notch, and the connecting piece is arranged with a plurality of second fitting grooves matched with the plurality of first fitting heads and/or a plurality of second fitting heads matched with the plurality of first fitting grooves.

[0011] In the above technical solution, preferably, the plurality of first fitting heads are arranged on a side wall at each of two end portions of the main notch on the base body, and a plurality of first fitting grooves are disposed on a bottom surface at each of two end portions of the main notch on the base body.

[0012] A plurality of second fitting grooves matched with the plurality of first fitting heads are disposed on a top surface of the connecting piece, and a plurality of second fitting heads matched with the plurality of first fitting grooves are arranged on left and right side walls of the connecting piece.

[0013] In the above technical solution, preferably, the plurality of first fitting heads and/or the plurality of second fitting heads are T-shaped pieces, the plurality of first fitting grooves and/or the plurality of second fitting grooves each include a first groove and a second groove that are communicated with each other, the first groove is used for inserting a head portion of one of the T-shaped pieces, and the second groove is used for inserting a rod portion of one of the T-shaped pieces.

[0014] In the above technical solution, preferably, the base body includes a first wall, a second wall, a third wall, a fourth wall and a fifth wall, the first wall and the second wall each have corresponding first fitting heads, the third wall, the fourth wall and the fifth wall each have corresponding first fitting grooves, and the first fitting grooves include openings disposed on corresponding bottom surfaces.

[0015] The main notch includes a first main notch formed by a spacing between the first wall and the second wall, a second main notch formed by a spacing between the third wall and the fourth wall, and a third main notch formed by a spacing between the third wall and the fifth wall.

[0016] The connecting piece includes a first part matched with the first main notch and a second part matched with a combination of the second main notch

and the third main notch, two second fitting grooves matched with the first fitting heads are disposed on the first part, and three second fitting heads matched with the first fitting grooves are arranged on the second part; a positioning piece extending transversely to reduce a width of the main notch at the position is arranged at an upper portion of the main notch, and the connecting piece includes a positioning notch matched with the positioning piece; and the base body includes a first extension head on one side of the main notch, a groove body is disposed on the first extension head, and the connecting piece includes a second extension head matched with the groove body.

[0017] In the above technical solution, preferably, rear ends of the two pedals each include corresponding mounting pieces, and two ends of a rear roller are respectively mounted on the corresponding mounting pieces; and two ends of a front roller are respectively mounted on left and right mounting positions of the treadmill head shell, and the running belt is wound on the front roller and the rear roller; the first hole is arranged at a position adjacent to the treadmill head shell and the running board; a plurality of reinforcing ribs are arranged on a back surface and/or a front surface of the running board; a plurality of reinforcing ribs are arranged on back surfaces or inside the two pedals; and a front end and/or a rear end of the running board extend(s) upwards to form protruding edges, which, in combination with the two pedals, define an accommodating space for a wear-resistant layer.

[0018] A method for mounting a treadmill running belt includes the steps of S1-S2.

[0019] In S1, the above treadmill base is taken, and an annular running belt is assembled onto the treadmill base from a side disposed with the main notch to the other side, in which a front end of the running belt enters the first hole through the main notch, and a rear end of the running belt is pushed in directly without obstruction, to cause an upper portion of the running belt to be located above the running board and a lower portion of the running belt to be located below the running board.

[0020] In S2, the connecting piece is assembled and positioned at the main notch.

[0021] In the above technical solution, preferably, in step S2, the connecting piece is assembled into the main notch from bottom to top and positioned by a fastener.

[0022] The present invention has the following beneficial effects:

The base body is designed to be integrally formed, and a treadmill can be quickly assembled only by mounting a driving motor, an electronic control unit, front and rear rollers and a running belt, so that mounting processes are simplified and mounting efficiency is improved.

[0023] A main notch for the running belt to pass through during mounting is disposed on the base body to facilitate the mounting of the running belt, and two separated parts at the main notch are connected by a connecting piece after the running belt is mounted to ensure the strength of the parts at the position. The treadmill base has a simple structure and convenient operation, greatly improves assembly efficiency and reduces production costs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024]

FIG. 1 is a schematic diagram of a treadmill base of the present invention.

FIG. 2 is an enlarged schematic diagram of Part D in FIG. 1.

FIG. 3 is a schematic diagram of another viewing angle of a front surface of the treadmill base of the present invention.

FIG. 4 is a schematic diagram of a back surface of the treadmill base of the present invention.

FIG. 5 is an enlarged schematic diagram of Part E in FIG. 4.

FIG. 6 is a schematic diagram of a separated state of a base body and a connecting piece of the present invention.

FIG. 7 is a schematic diagram of a main notch part of the base body of the present invention.

FIG. 8 is a schematic diagram of a back surface of the main notch part of the base body of the present invention.

FIG. 9 is a schematic diagram of the connecting piece of the present invention.

FIG. 10 is a schematic diagram of another viewing angle of the connecting piece of the present invention.

FIG. 11 is a schematic diagram of an integrally formed treadmill base without a main notch.

FIG. 12 is a schematic diagram of mounting of a front roller and a rear roller of the present invention.

DETAILED DESCRIPTION

[0025] The present invention will be described in further detail below with reference to the accompanying drawings and specific embodiments.

[0026] Referring to FIGS. 1 to 12, a treadmill base

includes an integrally formed base body 1, and the base body 1 includes an integrally formed treadmill head shell 11, a running board 12 and pedals 13 arranged on left and right sides of the running board 12.

[0027] Rear ends of the two pedals 13 each include two corresponding mounting pieces 131, and two ends of a rear roller 93 are respectively mounted on one of the corresponding mounting pieces 131. For example, mounting positions for mounting two end portions of the rear roller 93 are disposed on bottom surfaces of the mounting pieces 131 and two opposite side walls, and the mounting pieces can refer to a part for mounting the rear roller in the existing design. For example, two side walls of the treadmill head shell 11 are disposed with corresponding grooves for placing roller end shafts.

[0028] Two ends of a front roller 92 are respectively mounted on left and right mounting positions of the treadmill head shell 11, the mounting manner of the front roller 92 can also refer to the existing design, for example, two side walls of the treadmill head shell 11 are disposed with corresponding grooves for placing roller end shafts, and the running belt is wound on the front roller 92 and the rear roller 93.

[0029] Since the whole base body 1 is integrally formed, a first hole 2 for the running belt to pass through to be wound on the running board 12 is disposed on the base body 1 to adapt to the running belt. In one embodiment, the first hole 2 is arranged at a position adjacent to the treadmill head shell 11 and the running board 12, or the first hole 2 is directly disposed on a bottom surface of one end of the treadmill head shell 11 close to the running board 12. The left-right width of the first hole 2 is larger than or equal to the width of the running belt to provide sufficient space for the normal movement of the running belt.

[0030] The material of the integrally formed base body 1 can be engineering plastics and the like. To further improve the strength of the base body 1, a plurality of reinforcing ribs can be arranged on a back surface and/or a front surface of the running board 12, and a plurality of reinforcing ribs can be arranged on back surfaces or inside the pedals 13.

[0031] Further, a front end and/or a rear end of the running board 12 extend(s) upwards to form protruding edges 121, which, in combination with the two pedals 13, define an accommodating space for a wear-resistant layer to reduce the abrasion of the inner side wall of the running belt. An extension height of the protruding edges 121 can be the same as a thickness of the wear-resistant layer, so that a movement surface for a user to run and tread is overall flat after the wear-resistant layer is mounted. The material of the wear-resistant layer can refer to the existing design.

[0032] To enable the integrally formed base body 1 to be applicable to an annular running belt prepared by an upstream manufacturer, in the embodiment, a main notch 3 that is communicated with the first hole 2 and configured for the running belt to pass through during mounting is disposed on the base body 1. As one option, the main notch 3 can be disposed at a position of the treadmill head shell 11 close to the pedals 13, and the position is closest to the mounting position of the front roller 92.

[0033] After the annular running belt is mounted, a connecting piece 4 is mounted at the main notch, so that two end portions separated by arranging the main notch 3 are connected by the connecting piece 4 to ensure the supporting strength of the base body 1. Certainly, the connecting piece 4 can be designed to be matched with the shape and size of the main notch 3 for a better connection effect.

[0034] In the embodiment, the connecting piece 4 can be designed to be detachably mounted at the main notch 3, which not only facilitates mounting but also facilitates later maintenance and repair of the running belt, for example, the connecting piece 4 is inserted into the main notch 3 and then fixedly mounted on the base body 1 by a fastener.

[0035] Certainly, the connecting piece 4 can also be fixedly arranged at the main notch by means of welding and the like after the running belt is assembled.

[0036] For the assembly of the connecting piece 4, the connecting piece 4 can be inserted into the main notch 3 from bottom to top, from top to bottom, from left to right or from right to left. One insertion and fitting manner can adopt a manner of fitting heads and fitting grooves, that is, the fitting heads are inserted into the fitting grooves to assemble and position the connecting piece 4.

[0037] For example, the base body 1 is arranged with a plurality of first fitting heads 31 and/or a plurality of first fitting grooves 32 at the main notch 3, and the connecting piece 4 is arranged with a plurality of second fitting grooves 41 matched with the first fitting heads 31 and/or second fitting heads 42 matched with the first fitting grooves 32.

[0038] Specifically, the base body 1 includes a first wall 311, a second wall 312, a third wall 313, a fourth wall 314 and a fifth wall 315 at the position of the main notch 3, as shown in FIGS. 6 to 8. The first wall 311 and the second wall 312 each have corresponding first fitting heads 31, the third wall 313, the fourth wall 314 and the fifth wall 315 each have corresponding first fitting grooves 32, and the first fitting grooves 32 include openings 321 disposed on corresponding bottom surfaces. As one option, the first fitting heads 31 and the second fitting heads 42 can be of the same form, such as T-shaped pieces. Correspondingly, the first fitting grooves 32 and the second fitting grooves 41 can also be of the same form, such as T-shaped grooves, that is, the first fitting grooves 32 and the second fitting grooves 41 each include a first groove and a second groove communicated with each other, in which the first groove is used for inserting a head portion 31a of the T-shaped piece, and the second groove is used for inserting a rod portion 31b of the T-shaped piece.

[0039] As mentioned above, the third wall 313, the fourth wall 314 and the fifth wall 315 each have corresponding first fitting grooves 32, the first fitting grooves 32 are used for fitting the rod portion 31b of the T-shaped piece, and the openings 321 disposed on the corresponding bottom surfaces of the first fitting grooves 32 are used for fitting the head portion 31a of the T-shaped piece.

[0040] Further, the main notch can be divided into three parts, in which a first main notch 33 is formed by a spacing between the first wall 311 and the second wall 312, a second main notch 34 is formed by a spacing between the third wall 313 and the fourth wall 314, and a third main notch 35 is formed by a spacing between the third wall 313 and the fifth wall 315.

[0041] Correspondingly, the connecting piece 4 can be divided into two parts, a first part 43 matched with the first main notch 33 and a second part 44 matched with a combination of the second main notch 34 and the third main notch 35. The first part 43 is connected to an upper half portion of the main notch 3, and the second part 44 is connected to a lower half portion of the main notch 3. In this manner, the connecting piece 4 fills the whole main notch 3, and the supporting strength is basically consistent with that of a base body without a main notch.

[0042] Further, two second fitting grooves 41 matched with the first fitting heads 31 are disposed on a top surface of the first part 43, and three second fitting heads 42 matched with the first fitting grooves 32 are arranged on left and right side walls of the second part 44. During specific mounting, the first fitting heads 31 are aligned with the second fitting grooves 41, the second fitting heads 42 are aligned with the first fitting grooves 32, and then the connecting piece 4 is inserted into the main notch 3.

[0043] To facilitate the positioning of the connecting piece 4 and improve the fitting tightness between the connecting piece 4 and the part at the main notch 3, in the embodiment, a positioning piece 36 extending transversely is arranged at an upper portion of the main notch 3. Correspondingly, the connecting piece 4 includes a positioning notch 46 matched with the positioning piece 36. The transversely extending positioning piece 36 reduces a width of the main notch at the position, so that the positioning piece 36 can overlap with the connecting piece 4 in a longitudinal direction, which helps to improve the supporting strength of the base body 1 after the connecting piece 4 is mounted.

[0044] Further, the base body 1 includes a first extension head 71 on one side of the main notch 3, the first extension head 71 can be a part of a bottom surface of the treadmill head shell 11, a groove body 711 is disposed on the first extension head 71, and the connecting piece 4 includes a second extension head 72 matched with the groove body 711.

[0045] In one embodiment, hole sites for mounting fasteners can be disposed on the first extension head 71 and the second extension head 72 as well as at the positioning piece 36 and the positioning notch 46, and meanwhile, a plurality of hole sites for mounting fasteners can be disposed on a bottom surface of the connecting piece 4 and a corresponding position on the base body 1.

[0046] A method for mounting a treadmill running belt includes the following steps S1-S2.

[0047] In S1, the above base body 1 is taken, and an annular running belt is assembled onto the base body 1 from a side disposed with the main notch 3 to the other side, that is, the running belt is transversely pushed onto the base body 1. A front end of the running belt enters the first hole 2 through the main notch 3, and a rear end of the running belt can be pushed in directly as the rear end of the base body 1 is unobstructed. After being pushed in, the running belt is wound on the running board 12, an upper portion of the running belt is located above the running board 12, and a lower portion of the running belt is located below the running board 12. The front roller 92 and the rear roller 93 can be pushed in synchronously with the running belt and then mounted, or can be arranged at the front end and the rear end of the running belt after the running belt is mounted, and then two ends of each roller are positioned.

[0048] In S2, the connecting piece 4 is assembled and positioned at the main notch 3. As one option, the connecting piece 4 is assembled into the main notch 3 from bottom to top and positioned by a fastener.

[0049] FIG. 11 is a schematic diagram of an integrally formed treadmill base without a main notch. For the integrally formed treadmill base without a main notch, a running belt can be wound on a front roller and pass through a first hole when the running belt is not formed into an annular component (that is, the running belt is in a long strip shape and not packaged). One end of the running belt passes above the running board to a rear end of the treadmill, the other end of the running belt passes below the running board to the rear end of the treadmill, and then two end portions are connected after being wound on a rear roller, to form an annular running belt capable of circular and circumferential movement. The two end portions can be connected by means of adhesive bonding, hot melting and the like.

[0050] The above embodiments are only used to illustrate the technical solutions of the present invention, but not to limit the technical solutions. Although the present invention is described in detail with reference to the foregoing embodiments, those of ordinary skill in the art are to be understand that the technical solutions described in the foregoing embodiments can still be modified, or some technical features thereof can be equivalently replaced; and these modifications or replacements do not make the essence of the corresponding technical solutions depart from the spirit and scope of the technical solutions of the embodiments of the present invention.

Claims

1. A treadmill base, comprising an integrally formed base body, the base body being disposed with a first hole for a running belt to pass through to be wound on a running board.

2. The treadmill base according to claim 1, wherein the base body further comprises a main notch that is communicated with the first hole and configured for the running belt to pass through during mounting.

3. The treadmill base according to claim 2, wherein the base body comprises an integrally formed treadmill head shell, a running board and two pedals arranged on left and right sides of the running board.

4. The treadmill base according to claim 2, wherein a connecting piece is assembled at the main notch to form a connection between two ends of the main notch.

5. The treadmill base according to claim 2, wherein the connecting piece is detachably mounted at the main notch.

6. The treadmill base according to any one of claims 2 to 5, wherein the base body is arranged with a plurality of first fitting heads and/or a plurality of first fitting grooves at the main notch, and the connecting piece is arranged with a plurality of second fitting grooves matched with the plurality of first fitting heads and/or a plurality of second fitting heads matched with the plurality of first fitting grooves.

7. The treadmill base according to any one of claims 2 to 5, wherein the plurality of first fitting heads are arranged on a side wall at each of two end portions of the main notch on the base body, and a plurality of first fitting grooves are disposed on a bottom surface at each of two end portions of the main notch on the base body.

8. The treadmill base according to claim 7, wherein a plurality of second fitting grooves matched with the plurality of first fitting heads are disposed on a top surface of the connecting piece, and a plurality of second fitting heads matched with the plurality of first fitting grooves are arranged on left and right side walls of the connecting piece.

9. The treadmill base according to claim 8, wherein the plurality of first fitting heads and/or the plurality of second fitting heads are T-shaped pieces, the plurality of first fitting grooves and/or the plurality of second fitting grooves each comprise a first groove and a second groove that are communicated with each other, the first groove is used for inserting a head portion of one of the T-shaped pieces, and the second groove is used for inserting a rod portion of one of the T-shaped pieces.

10. The treadmill base according to claim 9, wherein the base body comprises a first wall, a second wall, a third wall, a fourth wall and a fifth wall, the first wall and the second wall each have corresponding first fitting heads, the third wall, the fourth wall and the fifth wall each have corresponding first fitting grooves, and the first fitting grooves comprise openings disposed on corresponding bottom surfaces.

11. The treadmill base according to claim 10, wherein the main notch comprises a first main notch formed by a spacing between the first wall and the second wall, a second main notch formed by a spacing between the third wall and the fourth wall, and a third main notch formed by a spacing between the third wall and the fifth wall.

12. The treadmill base according to claim 11, wherein the connecting piece comprises a first part matched with the first main notch and a second part matched with a combination of the second main notch and the third main notch, two second fitting grooves matched with the first fitting heads are disposed on the first part, and three second fitting heads matched with the first fitting grooves are arranged on the second part;

    a positioning piece extending transversely to reduce a width of the main notch at the position is arranged at an upper portion of the main notch, and the connecting piece comprises a positioning notch matched with the positioning piece; and
    the base body comprises a first extension head on one side of the main notch, a groove body is disposed on the first extension head, and the connecting piece comprises a second extension head matched with the groove body.

13. The treadmill base according to claim 3, wherein rear ends of the two pedals each comprise corresponding mounting pieces, and two ends of a rear roller are respectively mounted on the corresponding mounting pieces; and two ends of a front roller are respectively mounted on left and right mounting positions of the treadmill head shell, and the running belt is wound on the front roller and the rear roller;

    the first hole is arranged at a position adjacent to the treadmill head shell and the running

board;
a plurality of reinforcing ribs are arranged on a back surface and/or a front surface of the running board;
a plurality of reinforcing ribs are arranged on back surfaces or inside the two pedals; and
a front end and/or a rear end of the running board extend(s) upwards to form protruding edges, which, in combination with the two pedals, define an accommodating space for a wear-resistant layer.

14. A method for mounting a treadmill running belt, comprising steps of:

S1, taking the treadmill base according to any one of claims 4 to 10, and assembling an annular running belt onto the treadmill base from a side disposed with the main notch to the other side, wherein a front end of the running belt enters the first hole through the main notch, and a rear end of the running belt is pushed in directly without obstruction, to cause an upper portion of the running belt to be located above the running board and a lower portion of the running belt to be located below the running board; and
S2, assembling and positioning the connecting piece at the main notch.

15. The method for mounting a treadmill running belt according to claim 14, wherein in step S2, the connecting piece is assembled into the main notch from bottom to top and positioned by a fastener.

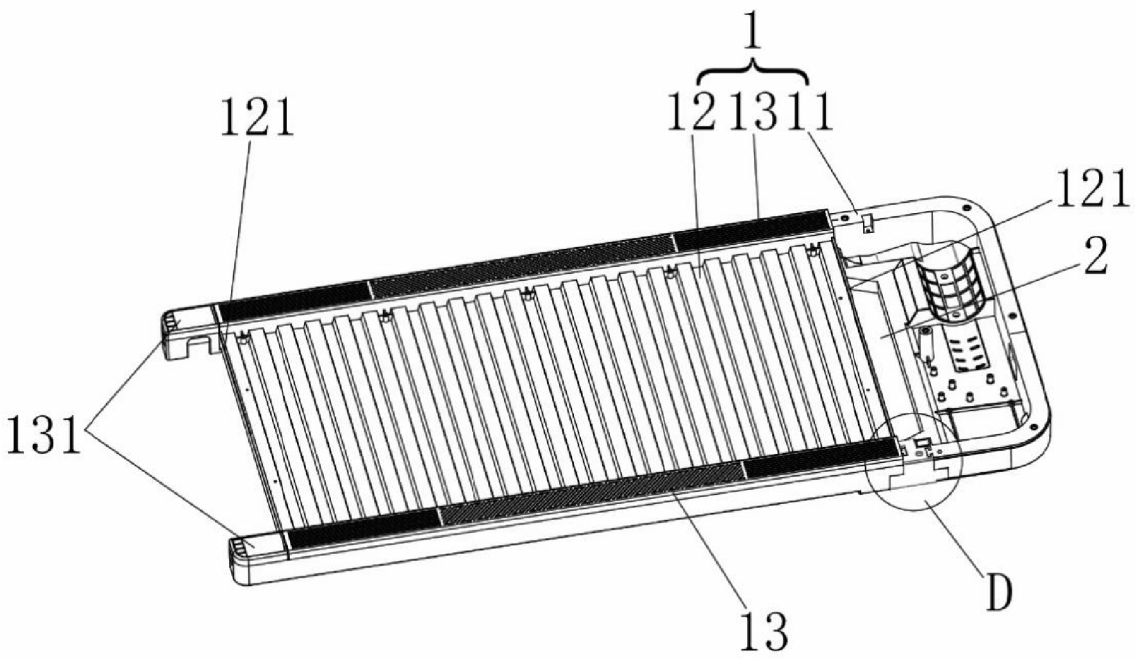


FIG. 1

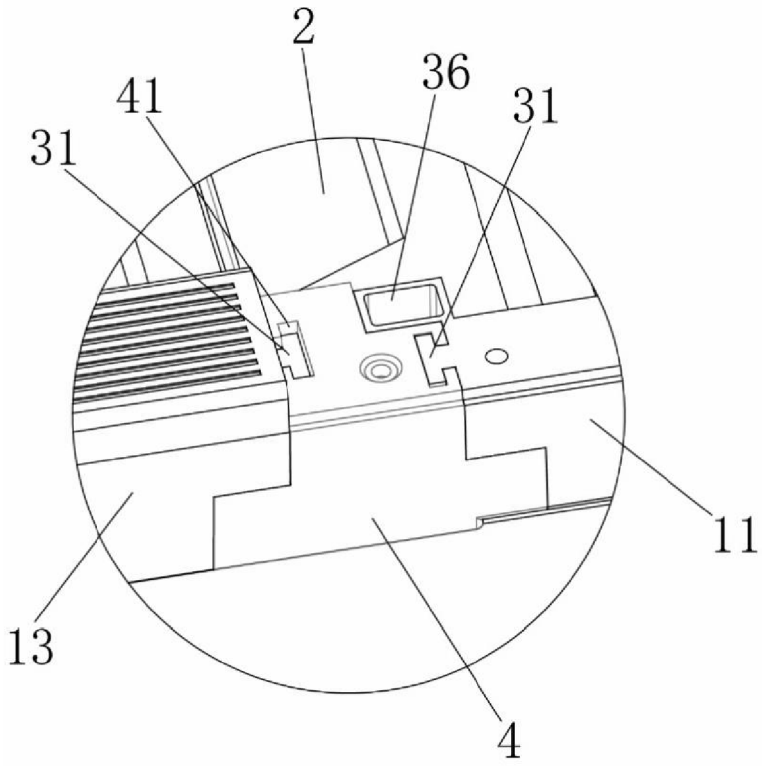


FIG. 2

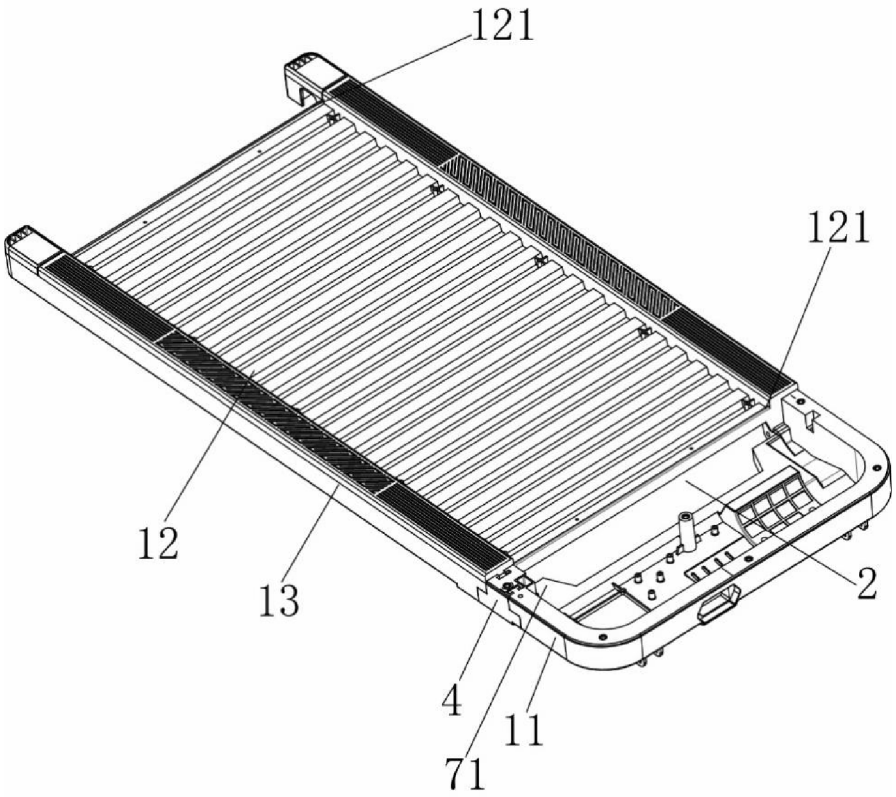


FIG. 3

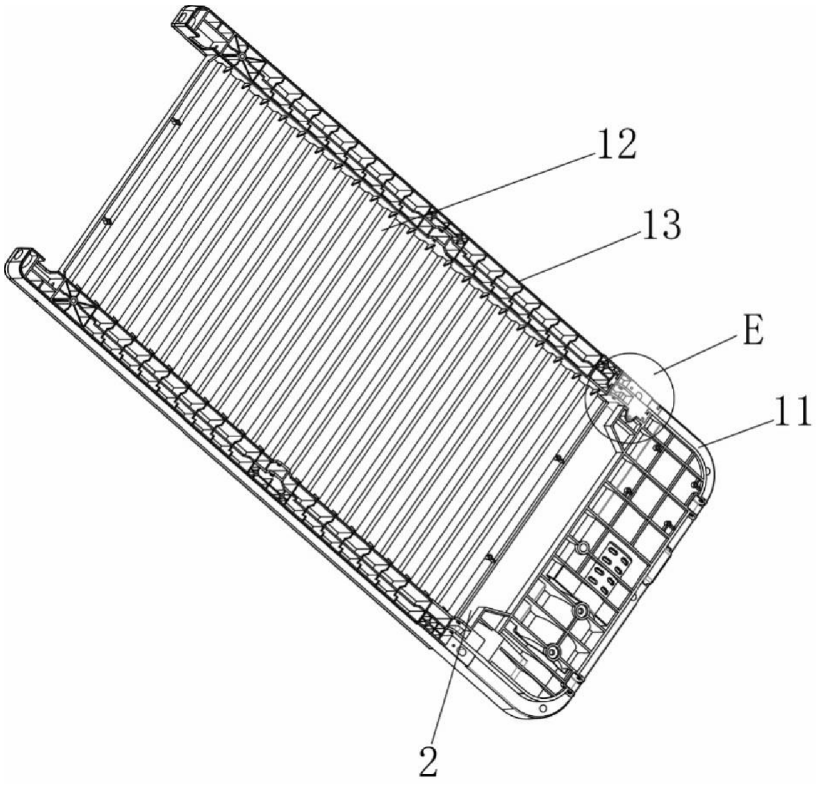


FIG. 4

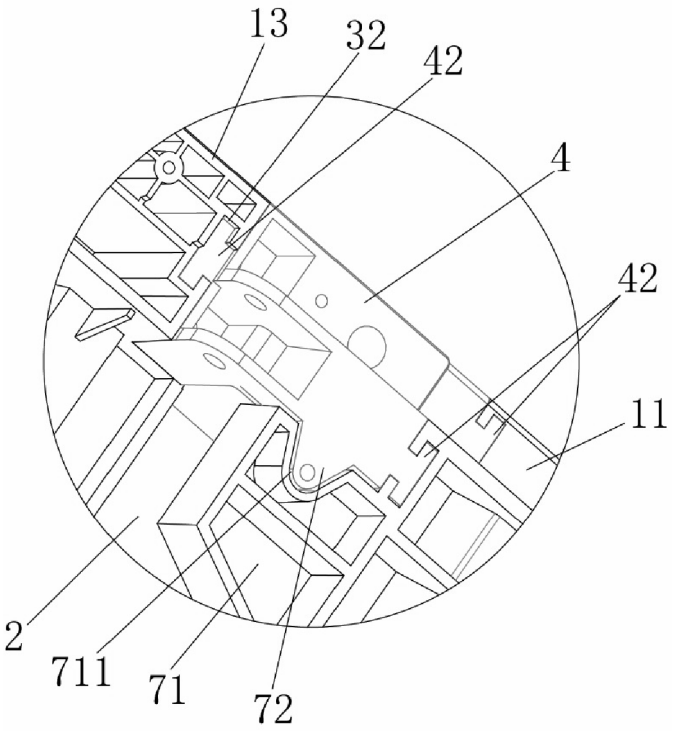

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FIG. 5

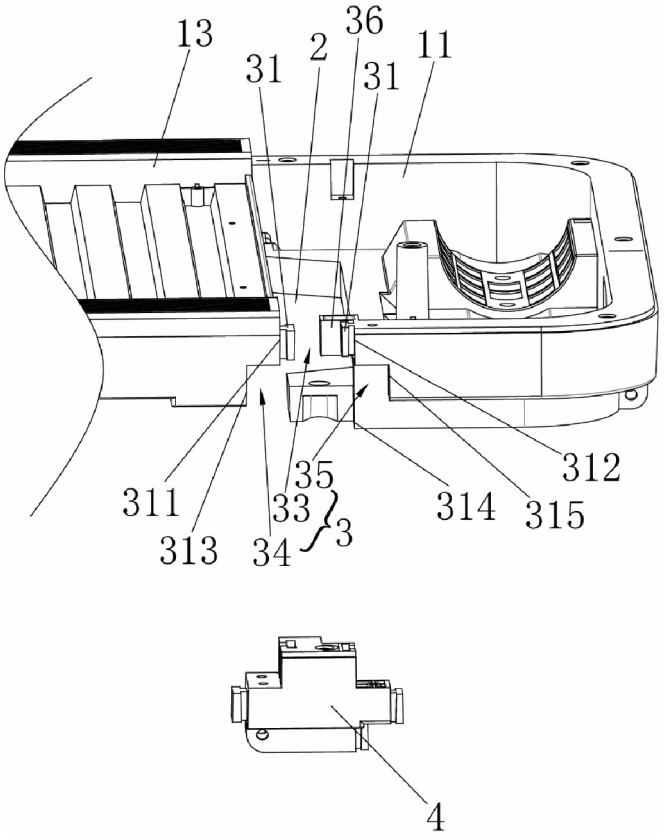

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FIG. 6

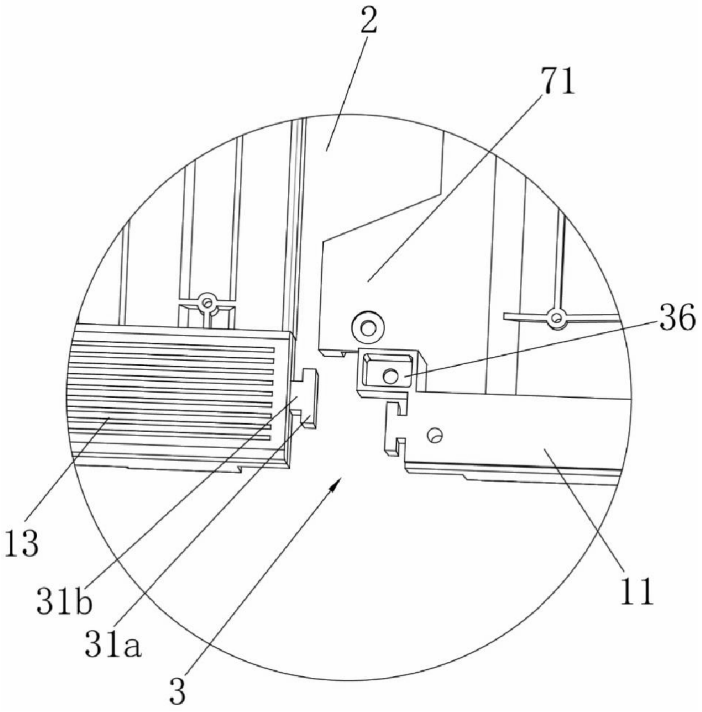

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31a
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FIG. 7

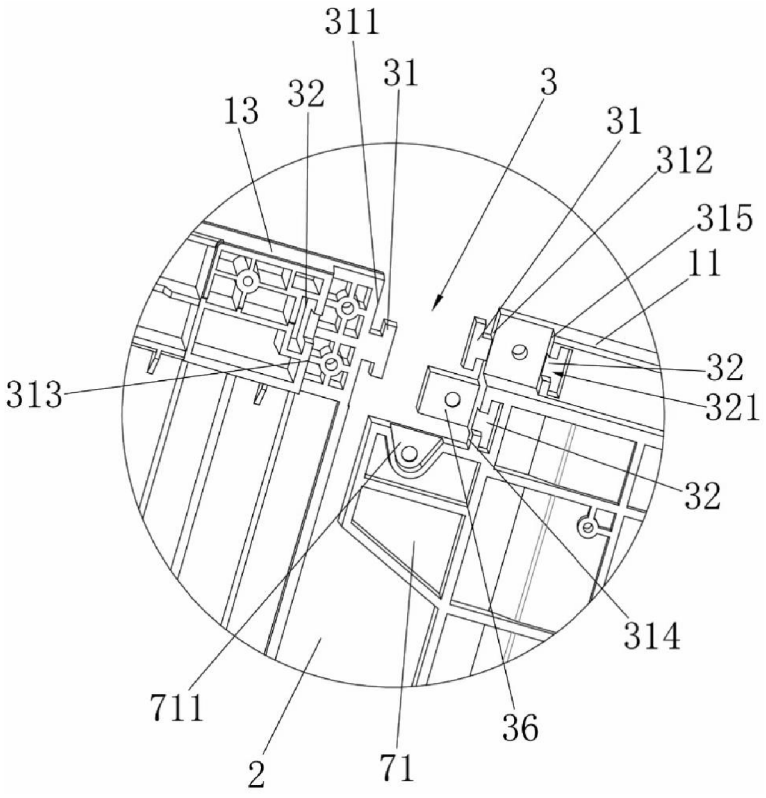

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FIG. 8

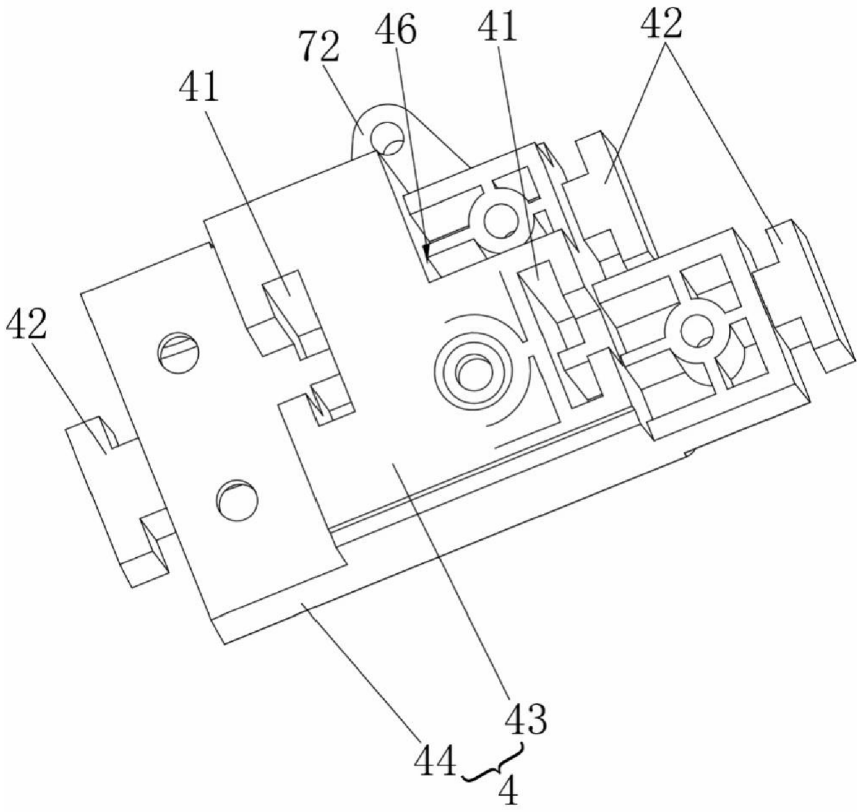


FIG. 9

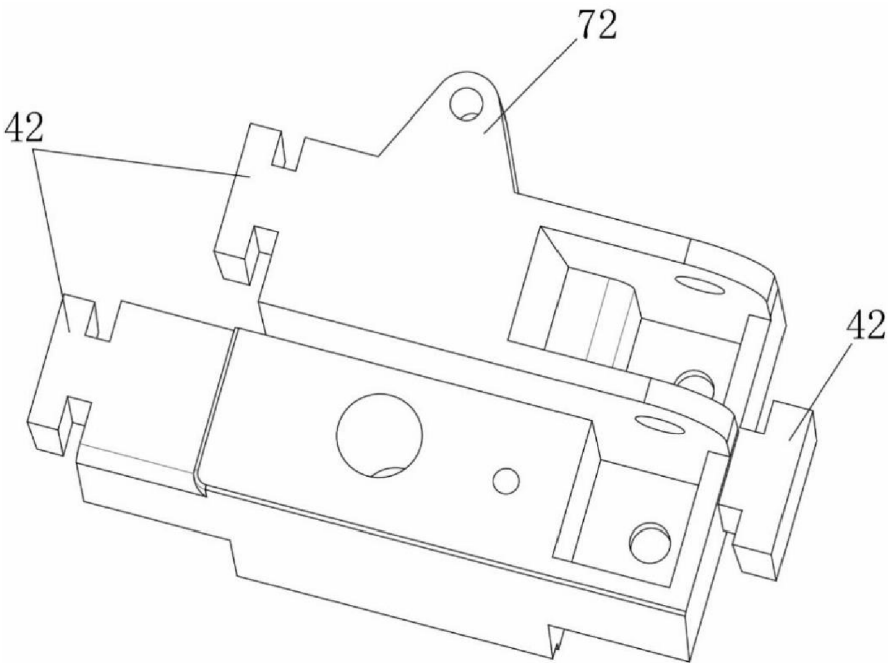


FIG. 10

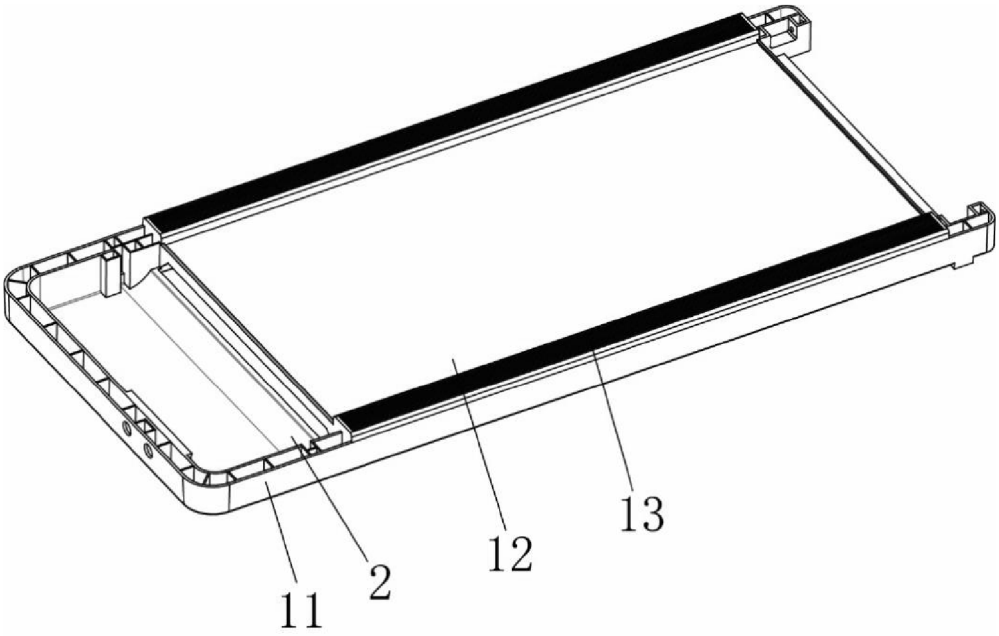


FIG. 11

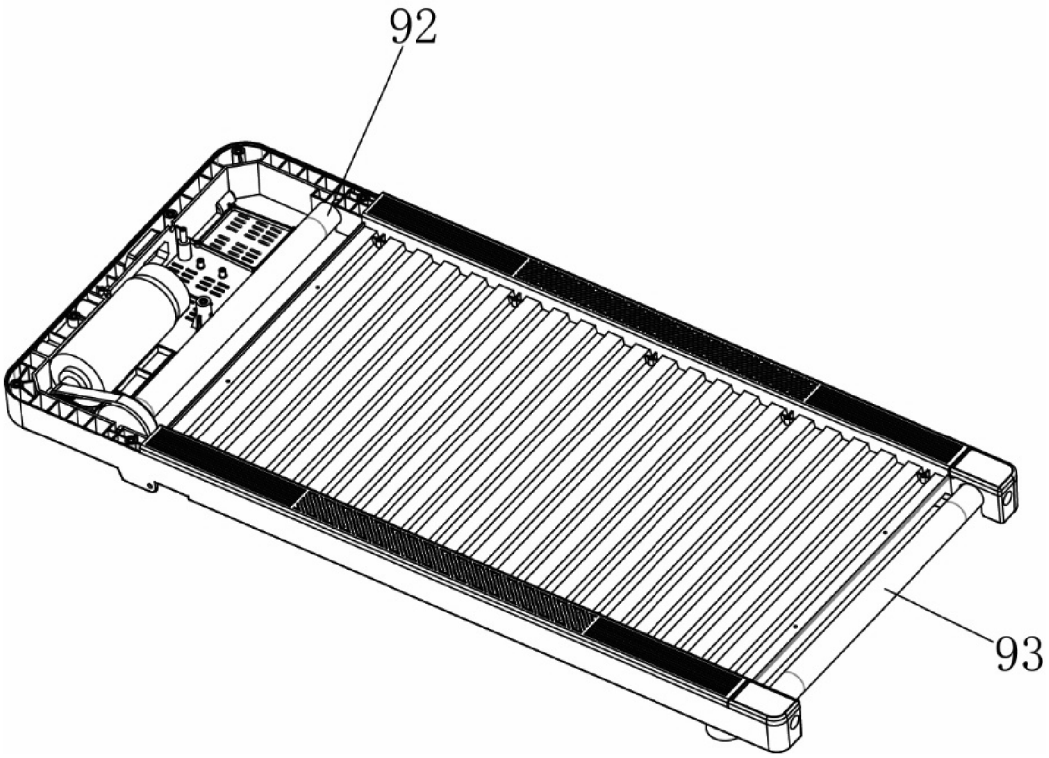


FIG. 12

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EUROPEAN SEARCH REPORT

Application Number
EP 26 17 2805

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 August 2026	Borrás González, E

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