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(54) GYMNASTIC MACHINE HAVING A CLOSED CIRCUIT SLIDING BELT PROVIDED WITH SECURITY ELEMENTS

GYMNASTIKGERÄT MIT EINEM MIT SICHERHEITSELEMENTEN VERSEHENEN GLEITBAND MIT GESCHLOSSENEM KREISLAUF

APPAREIL DE GYMNASTIQUE COMPORTANT UNE CEINTURE COULISSANTE EN CIRCUIT FERMÉ MUNIE D'ÉLÉMENTS DE SÉCURITÉ

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Description

[0001] The present invention relates to a gymnastic machine having a closed circuit sliding belt provided with safety elements.

[0002] More in detail, the invention relates to a closed-circuit sliding belt gymnastic machine of the type comprising a plurality of slats arranged transversely with respect to the running direction of the belt itself, and which forms an exercise surface that allows the user to perform gymnastic workouts, such as running, walking and the like, equipped with safety elements.

[0003] In these gymnastic machines, as soon as the user activates the machine to perform the gymnastic workout, the sliding belt is automatically moved by an electric motor, and therefore the user must adapt his walk or run according to the sliding speed of the sliding belt.

[0004] In the following, the description will be directed to a sliding belt machine with slats for the execution of running and walking workouts, but it is clear that it should not be considered limited to this specific use.

[0005] As it is well known, there are currently gymnastic machines with sliding belt with slats, or also commonly known as "roller shutter" machines comprising electric motors, which rotate the sliding belt for the execution of a gymnastic exercise or training program.

[0006] As is known, the sliding belts of gymnastic machines on the market comprise slats, provided with a continuous and flat surface and are coupled to the base structure, occupying a part thereof, the remaining part of the base structure is occupied by the frame of the base structure itself.

[0007] A disadvantage of known machines is represented by the fact that if a user distracts the attention during a gymnastic workout or encounters a problem in the execution of the same, he can mistakenly place a foot outside the area of the base structure occupied by the sliding belt, for example on the frame of the base structure, while the remaining foot rests on the moving belt.

[0008] This can obviously cause an accidental fall of the user from the gymnastic machine, with consequent physical damage to the user.

[0009] The relevant prior art also includes documents US 2018/126249 A1, US 6 095 952 A, EP 2 977 086 A1, US 2018/104534 A1 and document KR 102 062 492 B1 The invention relates to a gymnastic machine as claimed in claim 1.

[0010] In the light of the above, it is therefore an object of the present invention to provide a gymnastic machine with a sliding belt with slats provided with safety elements for the user who performs the gymnastic exercise on the machine.

[0011] A further object of the present invention is to provide a gymnastic machine with a sliding belt with slats provided with safety elements for the user placed close to an operating gymnastic machine.

[0012] It is therefore specific object of the present invention a gymnastic machine comprising a base structure comprising a first and a second longitudinal member, a sliding belt, on which a user can perform a gymnastic exercise, arranged between said first and second longitudinal member, configured for rotating according to a sliding direction and comprising a plurality of slats arranged side by side according to a transversal direction to said sliding direction and hinged to one other, said gymnastic machine being characterized in that at least one slat of said plurality of slats is provided with at least one safety element.

[0013] Further according to the invention, said at least one slat comprises a first end and a second end, and said at least one safety element is arranged in correspondence of said first or said second end.

[0014] Preferably according to the invention, said at least one slat is provided with a safety element arranged in correspondence of said first end and a safety element arranged in correspondence of said second end.

[0015] Still according to the invention, two or more slats of said plurality of slats are provided with at least one safety element.

[0016] Further according to the invention, each slat of said plurality of slats is provided with at least one safety element.

[0017] Preferably according to the invention, each slat of said plurality of slats is provided with one safety element arranged in correspondence of said first end and a safety element arranged in correspondence of said second end.

[0018] Still according to the invention, said safety element is a relief made on said slat.

[0019] Further according to the invention, said safety element is a thickening of the slat structure.

[0020] The present invention will be now described, for illustrative but not limitative purposes, according to its preferred embodiments, with particular reference to the figures of the enclosed drawings, wherein:

figure 1 illustrates a side perspective view of the closed-circuit sliding belt gymnastic machine provided with safety elements, object of the present invention;

figure 2 illustrates a side perspective view of a portion of the base structure of the gymnastic machine of figure 1;

figure 3 illustrates a side perspective view of a component included in the basic structure of the gymnastic machine of figure 1;

figure 4 illustrates a sectional front view, according to a plane orthogonal to the base structure, of the component of figure 3;

figure 5 illustrates a front view of the component of figure 3;

figure 6a illustrates a section along an axis AA of the component shown in figure 5;

figure 6b illustrates a section along an axis BB of the component shown in figure 5;

figure 7 illustrates a side perspective view of the gymnastic machine in a second embodiment of the closed-circuit sliding belt provided with safety elements, object of the present invention;
figure 8 illustrates a side perspective view of a portion of the base structure of the gymnastic machine of figure 7;
figure 9 illustrates a side perspective view of a component included in the basic structure of the gymnastic machine of figure 7;
figure 10 illustrates a section view, according to a plane orthogonal to the base structure, of the component of figure 9;
figure 11 illustrates a further front view of the component of figure 9;
figure 12a illustrates a section along an axis AA of the component shown in figure 11;
figure 12b illustrates a section along an axis BB of the component shown in figure 11;
figure 13 illustrates a side perspective view of a sliding belt according to a third embodiment, not covered by the claims;
figure 14a illustrates a perspective view of a portion of the sliding belt shown in figure 13;
figure 14b illustrates a perspective view of a further portion of the sliding belt shown in figure 13;
figure 15 illustrates a perspective view of another portion of the sliding belt shown in figure 13; and
figure 16 illustrates an exploded view of the portion of the sliding belt shown in figure 15.

[0021] In the various figures, similar parts will be indicated with the same numerical references.

[0022] With reference to figures 1-6b, the closed-circuit sliding belt gymnastic machine 1 provided with safety elements object of the present invention is shown.

[0023] Said gymnastic machine 1 essentially comprises a base structure 2, having a frame 21, comprising a first side member 22 and a second longitudinal member 23, parallel to each other, between which a sliding belt 3 is mounted, which is moved, according to a sliding direction indicated by X.

[0024] The gymnastic machine 1 also comprises a support structure 5, coupled to said base structure 2, used by the user during the ascent and the descent from the sliding belt 3, and in some moments, also as a support during the exercise.

[0025] Said sliding belt 3 is of the type also called "roller shutter-belt", due to the conformation of the operating surface, comprising a plurality of slats 31_a, 31_b, ..., 31_k, ... 31_n side by side, one next to the other according to a direction Y, transverse to the sliding direction X of said sliding belt 3, and articulated to each other.

[0026] Each slat 31_k of said sliding belt 3 is placed on, and fixed to the sides of two belts arranged below said slats, connected to the electric motor, not shown in the figure.

[0027] Each slat 31_k has an elongated shape, i.e., it has a prevalent dimension that extends along said Y-axis, and comprises a first end 311_k and a second end 312_k, opposite said first end 311_k.

[0028] At least one slat 31_k of said plurality of slats 31_a, 31_b, ..., 31_k, ... 31_n is provided with at least one safety element 4.

[0029] Said safety element is arranged in correspondence with said first end 311_k or said second end 312_k.

[0030] Without departing from the scope of protection of the present invention, it is also possible that at least one slat 31_k is provided with a safety element 4, arranged in correspondence with said first end 311_k, and with a safety element 4, arranged in correspondence with said second end 312_k.

[0031] However, to ensure the safety of a user who moves away from the central portion of said sliding belt 3, with the risk of inadvertently placing a foot on the frame 21 of said gymnastic machine 1, it is preferable that each slat 31_k of said plurality of slats 31_a, 31_b, ..., 31_k, ... 31_n is provided with a safety element 4, arranged in correspondence with said first end 311_k, and with a safety element 4, arranged in correspondence with said second end 312_k.

[0032] In a first embodiment, said safety element 4 is a relief.

[0033] Said relief 4 is made on each slat 31_k, in particular at one end of said slat 31_k.

[0034] In particular, the preferred configuration provides for the realization of a relief 4 in correspondence with said first end 311_k, and a relief 4 in correspondence with said second end 312_k of said slat 31_k.

[0035] In this way, if during the performance of the gymnastic workout the user places a foot on a relief 4, he perceives that he is running in proximity to the frame 21 of the gymnastic machine 1 and can therefore rearrange himself in the central area of the sliding belt 3.

[0036] In this way, the user avoids the risk of inadvertently placing a foot on the frame 21 of said gymnastic machine 1 during the workout, risking an injury.

[0037] Referring now to figures 7-12b, in a second embodiment said safety element 4' is a thickening of the structure of the slat 31_k.

[0038] In particular, only one end, or both ends of one or all of the plurality of slats 31_a, 31_b, ..., 31_k, ... 31_n, has a thickening in the structure of the slat 31_k which performs the same task of said relief 4 described above.

[0039] Both said relief 4 and said thickening 4' can be realized in each slat 31_n using a suitable "negative" form in the mold used to make the slat 31_n itself.

[0040] Each slat 31_n comprises an aluminum part 41, 41', which is the structural part, and a rubber part 42, 42', which is the running surface, with specific damping, friction, and the like characteristics.

[0041] Each slat 31_n can be obtained by co-injection molding or compression of rubber compound in order to obtain the rubber part 42, 42', which is vulcanized on the aluminum support 41, 41'.

[0042] Referring now to figures 13-16, in a third em-

bodiment, said safety element 4" is a plate.

[0043] In particular, said plate 4" is L-shaped and is fixed to said slat 31_k by means of fixing means or by means of shape couplings or by gluing.

[0044] In particular, said plate 4" can be fixed in correspondence with at least one end of at least one slat 31_k.

[0045] Or said plate 4" can be fixed in correspondence with at least one end of two or more slats 31_k.

[0046] Or said plate 4" can be fixed at both said first 311_k and second 312_k ends of at least one slat 31_k.

[0047] Or said plate 4" can be fixed at both said first 311_k and second 312_k ends of each slat 31_k.

[0048] Finally, if N is the maximum number of slats 31_k, said plate 4" can be fixed at both the first 311_k and second 312_k ends of N-1 slats 31_k.

[0049] Said plate 4" can be made of any material and in a color different from the color of the slats 31_k, so as to be visible to a user who comes closer to the gymnastic machine 1 while operating.

[0050] Said material can also be fluorescent or luminescent, to be visible in poor visibility conditions.

[0051] It is also possible to provide a sliding belt 3 provided both with said reliefs 4 and with said plates 4".

[0052] Furthermore, it is also possible to provide a sliding belt 3, provided with both said thickenings 4' and said plates 4".

[0053] The operation of the closed-circuit sliding belt gymnastic machine 1 provided with safety elements described above is as follows.

[0054] When a user wishes to carry out a running or walking gymnastic workout, he accesses said gymnastic machine 1 by positioning himself on said sliding belt 3, possibly in the central region of the latter.

[0055] According to the type of workout selected, the sliding belt 3 moves according to said sliding direction X.

[0056] If during the performance of a gymnastic exercise, the user places his foot on said safety element 4, he perceives that he is running in the proximity of the frame 21, in particular of the longitudinal members 22 and 23 of the gymnastic machine 1.

[0057] In this way, the user can correct his position, placing himself again in the central area of the sliding belt 3.

[0058] In this way, the user avoids the risk of inadvertently placing a foot on the frame 21 of said gymnastic machine 1 during the workout, risking an injury.

[0059] The operation of the gymnastic machine 1 is also unchanged for the safety element 4' of the second embodiment and for the safety element 4" of the third embodiment, which is not covered by the claims.

[0060] In particular, when the safety element 4" of the third embodiment is used, a further advantage is achieved.

[0061] In fact, since said plate 4" is visible at distance, if the sliding belt 3 is in motion, a user who is coming closer to the gymnastic machine 1 perceives that the belt 3 is moving thanks to the presence of the plate 4", and does not incur in the risk of getting on a running belt 3.

[0062] As is evident from the above description, said closed-circuit sliding belt gymnastic machine provided with safety elements, allows a user to reposition himself correctly on the sliding belt during the performance of a workout, should he perceive its proximity to the frame of the machine.

[0063] Furthermore, the safety elements allow a belt to be perceived from a distance, allowing a user to avoid the risk of getting on while the belt is moving.

[0064] The present invention has been described for illustrative but not limitative purposes, according to its preferred embodiments, but it is to be understood that modifications and/or changes can be introduced by those skilled in the art without departing from the relevant scope as defined in the enclosed claims.

Claims

1. Gymnastic machine (1) comprising

   a base structure (2) comprising a first (21) and a second (22) longitudinal member,
   a sliding belt (3), on which a user can perform a gymnastic exercise, arranged between said first (21) and second (22) longitudinal member, configured for rotating according to a sliding direction (X) and comprising a plurality of slats (31_a, 31_b, ..., 31_k, ... 31_n) arranged side by side according to a transversal direction (Y) to said sliding direction (X) and hinged to one other, said gymnastic machine (1) being **characterized**
   in that at least one slat (31k) of said plurality of slats (31_a, 31_b, ..., 31_k, ... 31_n) is provided with at least one safety element (4, 4'),
   in that said at least one slat (31_k) comprises a first end (311_k) and a second end (312_k),
   in that said at least one safety element (4, 4') is arranged in correspondence of said first (311_k) or said second (312_k) end, and
   in that said safety element (4, 4') is a relief made on said slat (31k) and/or a thickening of the slat structure (31k).

2. Gymnastic machine (1) according to the preceding claim, **characterized in that** said at least one slat (31k) is provided with a safety element (4, 4') arranged in correspondence of said first end (311k) and a safety element (4, 4') arranged in correspondence of said second end (312_k).

3. Gymnastic machine (1) according to any one of the preceding claims, **characterized in that** two or more slats of said plurality of slats (31_a, 31_b, ..., 31_k, ... 31_n) are provided with at least one safety element (4, 4').

4. Gymnastic machine (1) according to any one of the

preceding claims, **characterized in that** each slat (31_k) of said plurality of slats (31_a, 31_b, ..., 31_k, ... 31_n) is provided with at least one safety element (4, 4').

5. Gymnastic machine (1) according to any one of the preceding claims, **characterized in that** each slat (31_k) of said plurality of slats (31_a, 31_b, ..., 31_k, ... 31_n) is provided with one safety element (4, 4') arranged in correspondence of said first end (311_k) and a safety element (4, 4') arranged in correspondence of said second end (312_k).

Patentansprüche

1. Gymnastikgerät (1) umfassend eine Grundstruktur (2) umfassend einen ersten (21) und einen zweiten (22) Längsträger, ein Gleitband (3), auf dem ein Benutzer eine Gymnastikübung durchführen kann, das zwischen dem ersten (21) und dem zweiten (22) Längsträger angeordnet ist, zum Drehen gemäß einer Gleitrichtung (X) konfiguriert ist und eine Vielzahl von Lamellen umfasst (31_a, 31_b, ..., 31_k, ... 31_n) gemäß einer Querrichtung (Y) zur Schieberichtung (X) nebeneinander angeordnet und gelenkig miteinander verbunden, wobei das Turngerät (1) **dadurch gekennzeichnet, dass** mindestens eine Lamelle (31k) der Mehrzahl von Lamellen (31_a, 31_b, ..., 31_k, ... 31_n) mit mindestens einem Sicherheitselement (4, 4') versehen ist, die mindestens eine Lamelle (31_k) ein erstes Ende (311_k) und ein zweites Ende (312_k) umfasst, das mindestens eine Sicherheitselement (4, 4') entsprechend dem ersten (311_k) oder dem zweiten (312_k) Ende angeordnet ist, und das Sicherheitselement (4, 4') ein auf der Lamelle (31k) angebrachtes Relief und/oder eine Verdickung der Lamellenstruktur (31k) ist.

2. Gymnastikgerät (1) nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** die mindestens eine Latte (31k) mit einem Sicherheitselement (4, 4') versehen ist, dass entsprechend dem ersten Ende (311k) und einem Sicherheitselement angeordnet ist (4, 4'), die entsprechend dem zweiten Ende (312_k) angeordnet sind.

3. Gymnastikgerät (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** zwei oder mehr Lamellen der Mehrzahl von Lamellen (31_a, 31_b, ..., 31_k, ... 31_n) mit mindestens einer versehen sind Sicherheitselement (4, 4').

4. Gymnastikgerät (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** jede Lamelle (31_k) der Mehrzahl von Lamellen (31_a, 31_b, ..., 31_k, ..., 31_n) mit mindestens ein Sicherheitselement (4, 4').

5. Gymnastikgerät (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** jede Latte (31_k) der Mehrzahl von Latten (31_a, 31_b, ..., 31_k, ... 31_n) mit einer versehen ist Sicherheitselement (4, 4'), dass entsprechend dem ersten Ende (311_k) angeordnet ist, und ein Sicherheitselement (4, 4'), dass entsprechend dem zweiten Ende (312_k) angeordnet ist.

Revendications

1. Appareil de gymnastique (1) comprenant une structure de base (2) comprenant un premier (21) et un deuxième (22) éléments longitudinaux, une ceinture coulissante (3), sur laquelle un utilisateur peut effectuer un exercice de gymnastique, disposée entre lesdits premier (21) et deuxième (22) éléments longitudinaux, configurée pour tourner selon une direction de coulissement (X) et comprenant une pluralité de lattes (31_a, 31_b, ..., 31_k, ... 31_n) disposées côte à côte selon une direction transversale (Y) à ladite direction de coulissement (X) et articulés l'un par rapport à l'autre, ladite machine de gymnastique (1) étant **caractérisée en ce qu'**au moins une latte (31k) de ladite pluralité de lattes (31_a, 31_b, ..., 31_k, ... 31_n) est pourvue d'au moins un élément de sécurité (4, 4'), **en ce que** ladite au moins une latte (31_k) comprend une première extrémité (311_k) et une seconde extrémité (312_k), **en ce que** ledit au moins un élément de sécurité (4, 4') est disposé en correspondance de ladite première (311_k) ou de ladite seconde (312_k) extrémité, et **en ce que** ledit élément de sécurité (4, 4') est un relief réalisé sur ladite latte (31k) et/ou un épaississement de la structure de latte (31k).

2. Appareil de gymnastique (1) selon la revendication précédente, **caractérisée en ce que** ladite au moins une latte (31k) est pourvue d'un élément de sécurité (4, 4') disposé en correspondance de ladite première extrémité (311k) et d'un élément de sécurité (4, 4') disposé en correspondance de ladite seconde extrémité (312_k).

3. Appareil de gymnastique (1) selon l'une quelconque des revendications précédentes, **caractérisée en ce que** deux ou plusieurs lattes de ladite pluralité de lattes (31_a, 31_b, ..., 31_k, ... 31_n) est pourvue d'au moins un élément de sécurité (4, 4').

4. Appareil de gymnastique (1) selon l'une quelconque des revendications précédentes, **caractérisée en ce que** chaque latte (31_k) de ladite pluralité de lattes (31_a, 31_b, ..., 31_k, ... 31_n) est pourvue d'au moins un élément de sécurité (4, 4').

5. Appareil de gymnastique (1) selon l'une quelconque des revendications précédentes, **caractérisée en**

ce que chaque latte (31_k) de ladite pluralité de lattes (31_a, 31_b, ..., 31_k, ... 31_n) est pourvue d'un élément de sécurité (4, 4') disposé en correspondance de ladite première extrémité (311_k) et d'un élément de sécurité (4, 4') disposé en correspondance de ladite seconde extrémité (312_k).

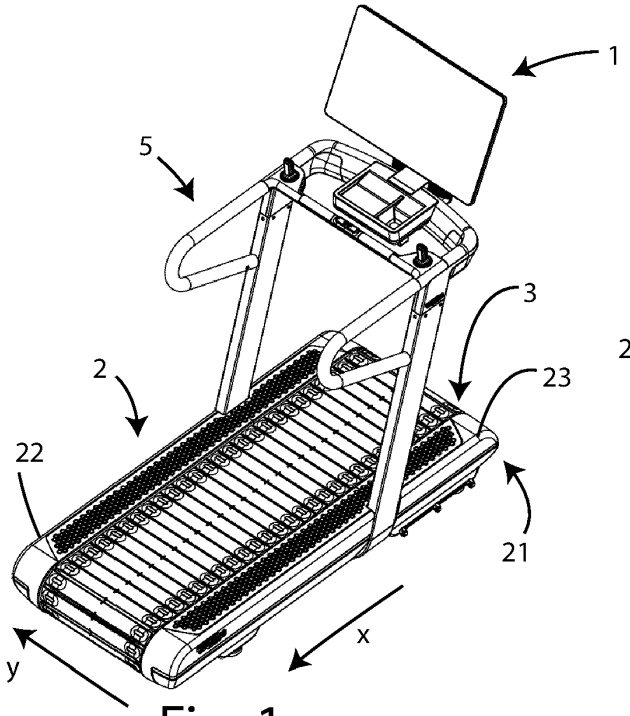

Fig. 1

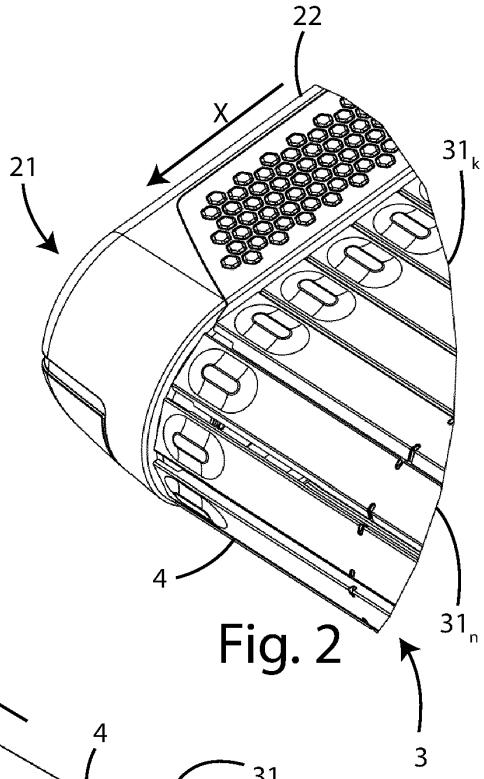

Fig. 2

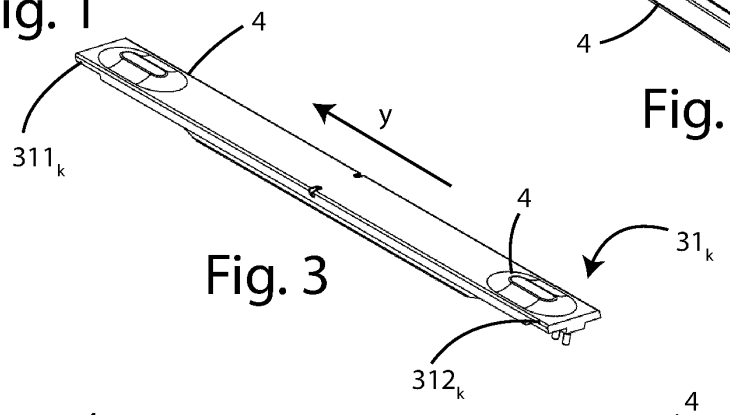

Fig. 3

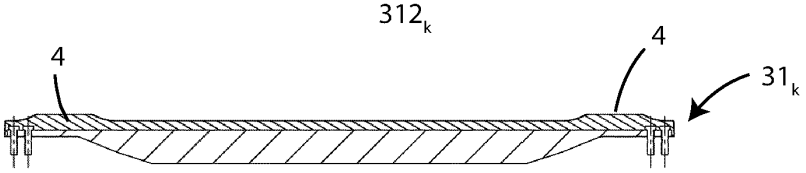

Fig. 4

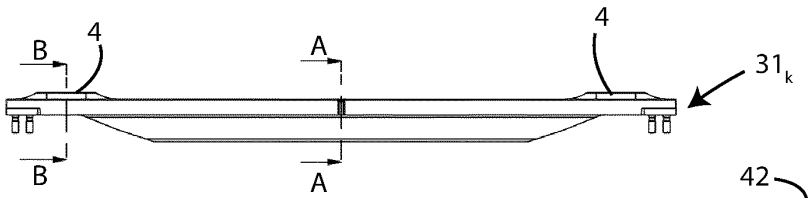

Fig. 5

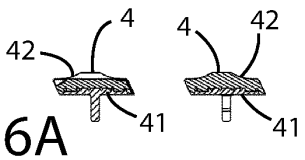

Fig. 6A
Sez. A-A

Fig. 6B
Sez. B-B

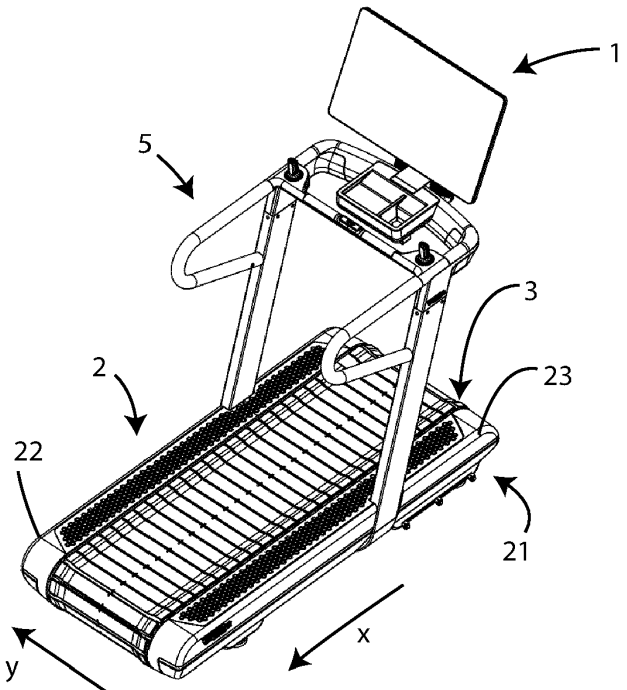

Fig. 7

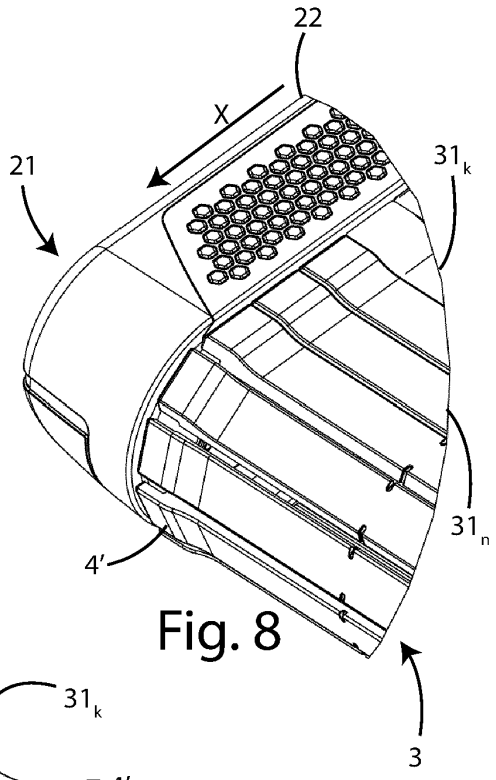

Fig. 8

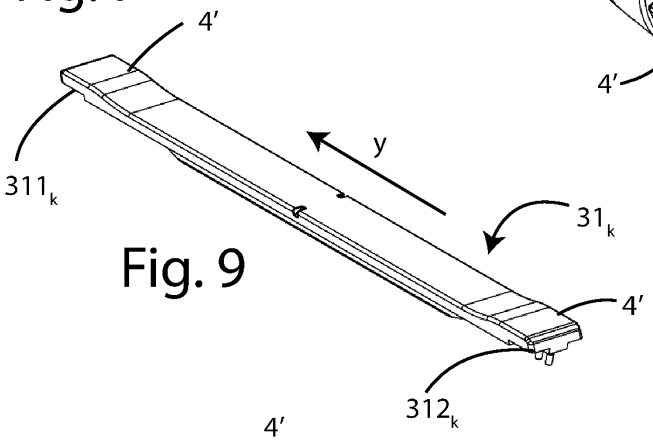

Fig. 9

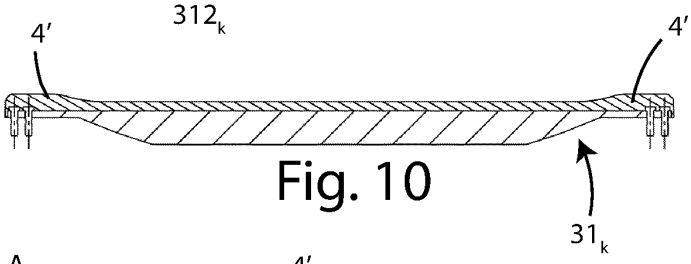

Fig. 10

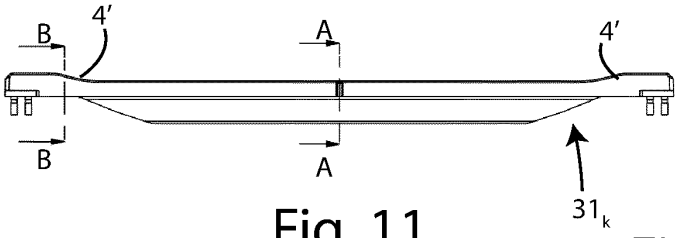

Fig. 11

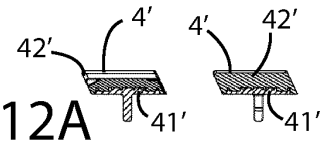

Fig. 12A
Sez. A-A

Fig. 12B
Sez. B-B

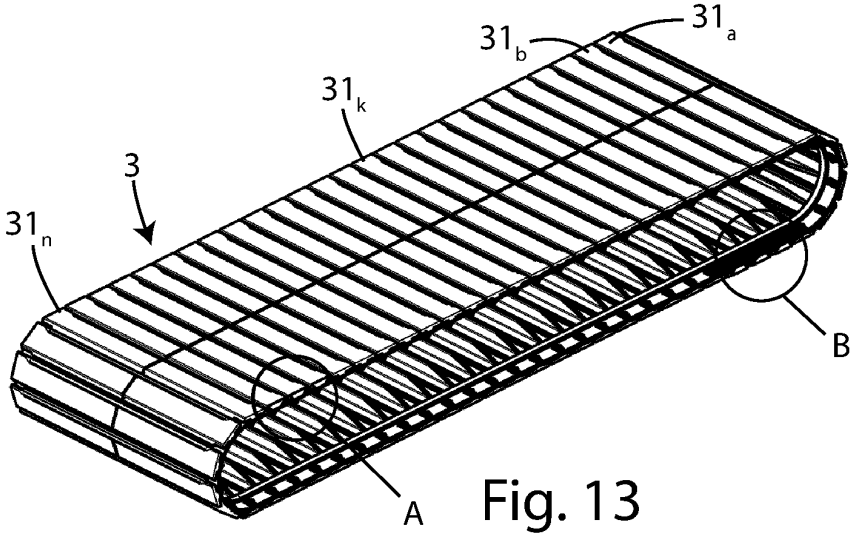

Fig. 13

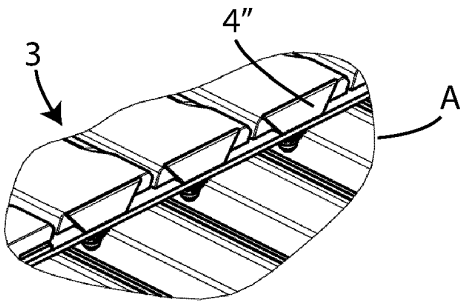

Fig. 14a

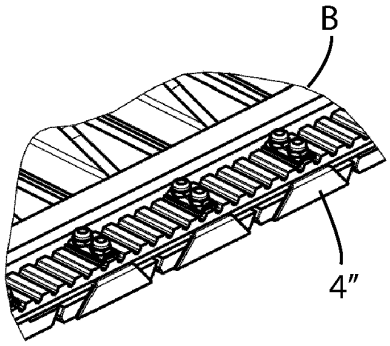

Fig. 14b

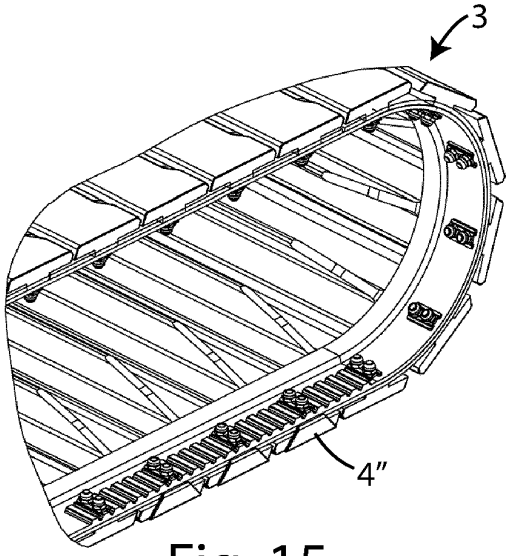

Fig. 15

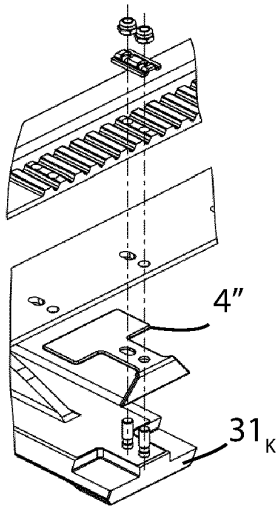

Fig. 16

REFERENCES CITED IN THE DESCRIPTION

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