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(54) **EXERCISE MACHINE FOR SIMULATING A CYCLING ACTION**

(57) An exercise machine (100) for simulating a cycling action, comprising:
- a support base (1) of the exercise machine (100), the support base (1) comprising a lower face (2) facing a support surface (S) on which the exercise machine (100) is placeable;
- at least one first fulcrum element (3) operatively connected to the support base (1) and extending from the lower face (2) of the support base (1), the exercise machine (100) being configured to tilt on the support surface (S) with respect to said at least one first fulcrum element (3);
- a plurality of bumper elements (4) operatively connected to the support base (1) and extending from the lower face (2) of the support base (1), the plurality of bumper elements (4) being compressible during the tilting of the exercise machine (100).

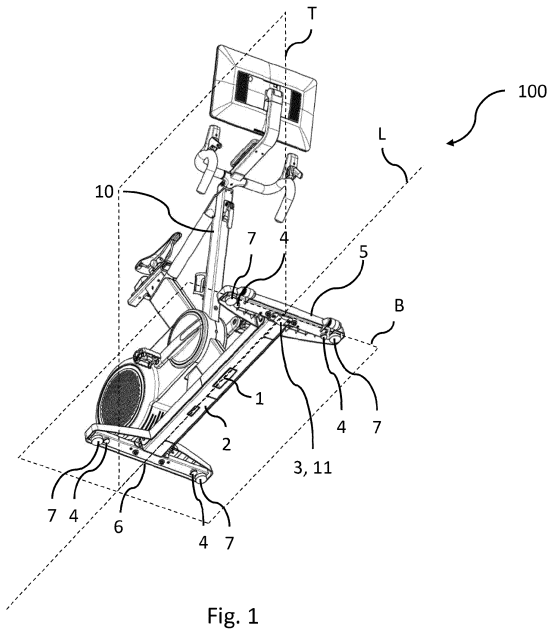

Fig. 1

EP 4 279 152 A1

Description

Field of the invention

[0001] The present invention relates to the field of fitness, and in particular to an exercise machine for simulating a cycling action.

Technological background of the invention

[0002] Nowadays, known exercise machines such as exercise or stationary bikes allow a targeted training session for simulating the cycling action in indoor or outdoor spaces, such as gyms or home environments.

[0003] These exercise machines conventionally consist of a single rigid structure consisting of a frame and a support base on the ground so as to ensure the stability of the exercise machine during the training session.

[0004] However, these exercise machines do not allow the cycling action to be effectively simulated in the most realistic manner possible, during which the athlete, especially in the most heated and challenging phases, works by displacing the bicycle to the left and right for balancing and making the pushing action on the pedals more effective, and the movements and displacements of the center of gravity involve the athlete's whole body, from the upper limbs firmly holding the handlebar to the lower limbs pushing on the pedals.

[0005] The hindrance of these natural movements during the training session on an exercise machine could result in several drawbacks.

[0006] In particular, if the training session continues for a long period of time, the rigid structure of known exercise machines inevitably results in the creation of situations of fatigue or tension overload, in particular in the lumbar area of the back, in the upper limbs and at the shoulder joint, creating a physical discomfort during the training session such as to force the interruption of the exercise.

[0007] Moreover, a delayed occurrence of muscular tensions or inflammatory statuses can arise, which can negatively affect the athlete's physical preparation, irrespective of the specific training session.

[0008] In order to meet the need for an improved cycling experience on indoor or outdoor exercise machines and to reduce the above-mentioned inconveniences, certain known solutions include providing such exercise machines with a technical contrivance adapted to allow the oscillation thereof to the right and left.

[0009] For example, it is known to provide exercise machines with an articulated structure arranged at the base of the frame, at the support base, which allows oscillating the frame of the exercise machine with respect to the support base, for example by means of hinged joints or shaft-hole connections.

[0010] Moreover, in order to ensure an experience as true as possible to the real cycling action, dissipative components are provided, typically springs, adapted to connect the frame and the support base to each other, which oppose the relative rotation between the components of the exercise machine.

[0011] However, these solutions are subject to the conventional problems of articulated connections, such as wear, and in case of a component breakage, maintenance can be excessively difficult.

[0012] Nonetheless, the implementation of these solutions requires a complex redesign of the typical rigid structure of traditional exercise machines, with increases in cost.

[0013] Moreover, the implementation of these solutions often is irreversible: a user who prefers an exercise machine with a non-articulated rigid structure, for example if he/she wants to carry out low intensity exercises such as warming-down exercises or for other needs associated with the occurrence of discomfort or motion sickness associated with the oscillations, could not use the exercise machine modified to oscillate by implementing the known solutions.

[0014] In light of the foregoing, the need is strongly felt to provide a solution which allows providing an exercise machine with the possibility of simulating a cycling action which is easy to implement, use and maintain, and is affordable to manufacture, while allowing the exercise machine to keep increased versatility of use.

Summary

[0015] It is the object of the present invention to devise and provide an exercise machine for simulating a cycling action which allows at least partially obviating the drawbacks mentioned above with reference to the known technique, in particular which allows, in addition to the conventional static use, being also operable in a tilting manner to simulate the real cycling action in the truest manner possible and support the natural movements of the athlete's body, even during more intense exercises, which is easy to use and maintain, and is affordable to manufacture, while ensuring increased versatility of use.

[0016] Such an object is achieved by an exercise machine according to claim 1.

[0017] The present invention also relates to a device for simulating a cycling action for an exercise machine, in particular exercise or stationary bikes.

[0018] Preferred embodiments of said exercise machine are defined in the dependent claims.

Brief description of the drawings

[0019] Further features and advantages of the exercise machine according to the invention will become apparent from the following description of preferred embodiments, given by way of non-limiting indication, with reference to the accompanying drawings, in which:

- Figure 1 shows an exercise machine according to an embodiment of the present invention;

- Figure 2 shows the exercise machine in Figure 1, with some components in exploded view;
- Figure 3 and Figure 4 show a front view and rear view, respectively, of the exercise machine in Figure 1 in a first operating configuration;
- Figure 5 shows an enlarged portion of the exercise machine in Figure 3;
- Figure 6 shows an enlarged portion of the exercise machine in Figure 4;
- Figure 6' shows an enlarged portion of the exercise machine according to a further embodiment of the invention;
- Figure 7 and Figure 8 show a front view and rear view, respectively, of the exercise machine in Figure 1, in a second operating configuration;
- Figure 9 shows an enlarged portion of the exercise machine in Figure 7;
- Figure 10 shows an enlarged portion of the exercise machine in Figure 8;
- Figure 10' shows an enlarged portion of the exercise machine according to a further embodiment of the invention;
- Figure 11 shows a perspective view of a component of the exercise machine according to an embodiment;
- Figure 12 shows a perspective view of a further component of the exercise machine according to an embodiment;
- Figure 13A diagrammatically shows a portion of the exercise machine according to an embodiment of the present invention in the first operating configuration;
- Figure 13B diagrammatically shows the portion in Figure 13A in the second operating configuration;
- Figure 14A diagrammatically shows a further portion of the exercise machine according to an embodiment of the present invention in the first operating configuration;
- Figures 14B and 14C diagrammatically show the further portion in Figure 14A in the second operating configuration;
- Figure 15 shows a perspective view of a further component of the exercise machine according to a further embodiment, and
- Figure 16 shows a perspective view of a device for simulating a cycling action for an exercise machine according to an embodiment of the present invention.

[0020] It is noted that, in the aforesaid drawings, equal or similar elements are indicated by the same numeric and/or alphanumeric references.

Detailed description

[0021] With reference to the drawings, reference numeral 100 indicates as a whole an exercise machine usable for simulating a cycling action.

[0022] "Exercise machine" means any exercise machine which requires performing a cycling action during the exercise, such as an exercise or stationary bike, for example.

[0023] The exercise machine 100 comprises a support base 1 of the exercise machine 100.

[0024] Such a support base 1 comprises a lower face 2 facing a support surface S on which the exercise machine 100 is placeable.

[0025] The support surface S of the exercise machine 100 means any surface, substantially flat or not, on which the exercise machine 100 is placeable, conventionally the floor or ground.

[0026] The exercise machine 100 further comprises at least one first fulcrum element 3 operatively connected to the support base 1.

[0027] The at least one first fulcrum element 3 extends from the lower face 2 of the support base 1.

[0028] The exercise machine 100 is configured to tilt on the support surface S with respect to said at least one first fulcrum element 3.

[0029] In particular, the at least one first fulcrum element 3 is the element around which the tilting movement of the exercise machine 100 can occur during the tilting of the exercise machine 100 by the user to the left or right and/or possibly forwards or backwards.

[0030] In particular, during the tilting of the exercise machine 100, the surface of the at least one first fulcrum element 3 rolls over the support surface S on which the exercise machine 100 is placeable, allowing a portion of the at least one first fulcrum element 3 to be placed on the support surface S during the rolling thereof.

[0031] In this regard, the exercise machine 100 further comprises a plurality of bumper elements 4 operatively connected to the support base 1 and extending from the lower face 2 of the support base 1.

[0032] The plurality of bumper elements 4 is compressible against the support surface S on which the exercise machine 100 is placeable during the tilting of the exercise machine 100.

[0033] In particular, each of said bumper elements 4 is advantageously compressible against the support surface S on which the exercise machine 100 is placeable in at least one portion thereof when subjected to an external compression force.

[0034] The compression of at least one of said plurality of bumper elements 4 opposes, but does not prevent, the tilting action of the exercise machine 100.

[0035] In this regard, Figure 13A, to which reference is also made below, diagrammatically shows a portion of the exercise machine 100 when the exercise machine 100 is not subjected to tilting by the user.

[0036] Here, the plurality of bumper elements 4 is not subjected to an external compression force.

[0037] Contrarily, Figure 13B, to which reference is also made below, diagrammatically shows the portion of the exercise machine 100 in Figure 13A when the exercise machine 100 is subjected to tilting by the user.

[0038] Here, one of the bumper elements 4 (in Figure 13B, the bumper element to the left of the at least one first fulcrum element 3) is subjected to a compression force.

[0039] With respect to the plurality of bumper elements 4, the at least one first fulcrum element 3 is made of a material having a greater rigidity so as to be substantially non-compressible during the tilting action of the exercise machine 100.

[0040] In a first embodiment, in combination with the preceding one and shown in the drawings, the support base 1 further comprises a first portion 5 at the front part of the exercise machine 100 and a second portion 6 at the rear part of the exercise machine 100.

[0041] In greater detail, the first portion 5 and/or the second portion 6 preferably have a shape such as to extend transversely with respect to a longitudinal extension axis L of the exercise machine 100 (shown with a dotted line in Figures 1 and 2) so as to increase the support surface and therefore the stability thereof.

[0042] In a further embodiment, in combination with the preceding one and shown in the drawings, the at least one first fulcrum element 3 is operatively connected substantially in the center of the first portion 5 of the support base 1.

[0043] In a further embodiment, in combination with the preceding one and shown in the drawings, the plurality of bumper elements 4 comprises at least one first bumper element 4' and at least one second bumper element 4" operatively connected to said first portion 5 of the exercise machine 100 and positioned on opposite sides with respect to said at least one first fulcrum element 3.

[0044] In this embodiment, as shown in the drawings, looking at the exercise machine 100 from the front, the at least one first bumper element 4' and the at least one second bumper element 4" are to the left and right, respectively, of said at least one first fulcrum element 3 positioned therebetween.

[0045] Preferably, as shown in the drawings, the at least one first bumper element 4' and the at least one second bumper element 4" are positioned symmetrically with respect to said at least one first fulcrum element 3.

[0046] According to a further embodiment, alternatively to the preceding ones in which the at least one first fulcrum element 3 is operatively connected to the first portion 5 of the support base 1, the at least one first fulcrum element 3 is operatively connected substantially in the center of said second portion 6 of the support base 1.

[0047] In a further embodiment, in combination with the preceding one, the plurality of bumper elements 4 comprises a respective at least one first bumper element 4' and a respective at least one second bumper element 4" operatively connected to said second portion 6 of the exercise machine 100 and positioned on opposite sides with respect to said at least one first fulcrum element 3.

[0048] In this embodiment, looking at the exercise machine 100 from the back, said at least one first bumper element 4' and said at least one second bumper element 4" are to the left and right, respectively, of said at least one first fulcrum element 3 positioned therebetween.

[0049] Preferably, the at least one first bumper element 4' and the at least one second bumper element 4" are positioned symmetrically with respect to said at least one first fulcrum element 3.

[0050] In a further embodiment, shown in Figures 6' and 10', in combination with any of the preceding ones in which the at least one first fulcrum element 3 is operatively connected to the first portion 5 of the support base 1, the exercise machine 100 further comprises at least one second fulcrum element 3" operatively connected to the support base 1.

[0051] The at least one second fulcrum element 3" extends from the lower face 2 of the support base 1.

[0052] The exercise machine 100 is further configured to tilt on the support surface S with respect to said at least one second fulcrum element 3".

[0053] In particular, the at least one second fulcrum element 3" is the element around which the tilting movement of the exercise machine 100 can occur during the tilting of the exercise machine 100 by the user to the left or right and/or possibly forwards or backwards.

[0054] In particular, during the tilting of the exercise machine 100, the surface of the at least one first fulcrum element 3 rolls over the support surface S on which the exercise machine 100 is placeable, allowing a portion of the at least one first fulcrum element 3 to be placed on the support surface S during the rolling thereof.

[0055] In this embodiment, as shown in Figures 6' and 10', the at least one second fulcrum element 3" is operatively connected to said second portion 6 of the support base 1.

[0056] In a further embodiment, in combination with the preceding one and shown in Figures 6' and 10', the at least one second fulcrum element 3" is operatively connected substantially in the center of the second portion 6 of the support base 1.

[0057] Therefore, in this embodiment, at least one first fulcrum element 3 operatively connected to the first portion 5 at the front part of the exercise machine 100 and at least one second fulcrum element 3" operatively connected to the second portion 6 at the rear part of exercise machine 100 can be provided so that the exercise machine 100 is configured to tilt on the support surface S with respect to both said at least one first fulcrum element 3 and said at least one second fulcrum element 3".

[0058] In a further embodiment, in combination with the preceding one and shown in Figures 6' and 10', the plurality of bumper elements 4 comprises at least one further first bumper element 4' and at least one further second bumper element 4" operatively connected to said second portion 6 of the exercise machine 100 and positioned on opposite sides with respect to said at least one second fulcrum element 3".

[0059] In this embodiment, as shown in Figures 6' and 10', looking at the exercise machine 100 from the back,

the at least one further first bumper element 4' and the at least one further second bumper element 4" are to the left and right, respectively, of said at least one second fulcrum element 3" positioned therebetween.

[0060] Preferably, as shown in the drawings, the at least one further first bumper element 4' and the at least one further second bumper element 4" are positioned symmetrically with respect to said at least one second fulcrum element 3".

[0061] In a further embodiment, in combination with any one of those described above, the exercise machine 100 further comprises a plurality of feet 7 operatively connected to the support base 1.

[0062] The plurality of feet 7 is made of a material having a greater rigidity than the plurality of bumper elements 4 so as to be substantially non-compressible.

[0063] In this embodiment, each foot 7 extends from the lower face 2 of the support base 1 over an extended portion 8 up to a free end 9 adapted to come into contact with the support surface S of the exercise machine 100.

[0064] In this embodiment, the extended portion 8 of each foot 7 is adjustable with respect to the support base 1 so that the exercise machine 100 takes a first operating configuration and a second operating configuration.

[0065] In the first operating configuration (shown in Figures 3, 4, 5, 6, 14A, for example), the support base 1 comes into contact with the support surface S of the exercise machine 100 by the free end 9 of each foot 7, thus preventing the exercise machine 100 from tilting.

[0066] In the second operating configuration (shown in Figures 7, 8, 9, 10, 14B, 14C, for example), the support base 1 comes into contact with the support surface S on which the exercise machine 100 is placeable with a portion of the at least one first fulcrum element 3 and at least one of said plurality of bumper elements 4.

[0067] During the cycling action on the exercise machine 100 by the user, the compression of said plurality of bumper elements thus promotes the tilting of the exercise machine 100.

[0068] Moreover, in the second operating configuration, the free end 9 of at least one of said plurality of feet 7 is not in contact with the support surface S.

[0069] It should be noted that, as shown in the drawings, said at least one of said plurality of feet 7, the free end 9 of which is not in contact with the support surface S, is exactly that on the same side, with respect to the at least one first fulcrum element 3 (or the at least one second fulcrum element 3"), as the at least one of said plurality of bumper elements 4 in contact with the support surface S.

[0070] In particular, it should be noted that said at least one of said plurality of feet 7, the free end 9 of which is not in contact with the support surface S, is configured to serve an end-of-stroke function during the tilting of the exercise machine 100 since it prevents the exercise machine from tilting further if such a free end 9 comes into contact with the support surface S.

[0071] Preferably, the first operating mode is obtained by adjusting the extended portion 8 of each foot 7 so that the support base 1 comes into contact with the support surface S of the exercise machine 100 with the free end 9 of each foot 7.

[0072] Moreover, the second operating configuration is preferably obtained by adjusting the extended portion 8 of each foot 7 so that the support base 1 comes into contact with the support surface S of the exercise machine 100 with all the bumper elements of said plurality of bumper elements 4.

[0073] In order to describe examples of the preferred first operating configuration and examples of the second operating function that the exercise machine 100 can take, the base extension plane B is defined as the plane defined by the lower face 2 of the exercise machine 100.

[0074] In the first operating configuration, as shown in Figures 13A, 14A, the base extension plane B is substantially parallel to the above-defined support surface S on which the exercise machine 100 is placed.

[0075] In the second operating configuration and in the absence of compression of said plurality of bumper elements 4, as shown in Figures 13B, 14B, the base extension plane B is substantially parallel to the support surface S on which the exercise machine 100 is placed.

[0076] In the second operating configuration and in the presence of the compression of at least one of said plurality of bumper elements 4, as shown in Figures 13B and 14C, the base extension plane B is tilted with respect to the support surface S on which the exercise machine 100 is placed, by a base inclination angle α having a varying value as a function of the amount of compression of the at least one of said plurality of bumper elements 4.

[0077] According to a further embodiment, in combination with any one of those described above, the exercise machine 100 comprises a frame 10 mechanically constrained to the support base 1 in an integral manner.

[0078] In this regard, a frame extension plane T is defined as the plane defined by the frame 10 of the exercise machine 100.

[0079] In the first operating configuration, as shown in Figures 13A, 14A, the frame extension plane T is substantially parallel to a vertical reference plane V perpendicular to the support surface S of the exercise machine 100.

[0080] In the second operating configuration, as shown in Figures 13B, 14B, and in the absence of compression of said plurality of bumper elements 4, the frame extension plane T is substantially parallel to said vertical reference plane V.

[0081] In the second operating configuration, as shown in Figures 13B and 14C, and in the presence of the compression of at least one of said plurality of bumper elements 4, the frame extension plane T is tilted with respect to the vertical reference plane V by a frame inclination angle β having a varying value as a function of the amount of compression of the at least one of said plurality of bumper elements 4.

[0082] The base inclination angle α and the frame in-

clination angle β are substantially equal.

[0083] In an embodiment, in combination with any one of those described above in which the plurality of feet 7 is provided, the plurality of feet 7 is operatively connected to the support base 1 by a screw-nut screw connection.

[0084] In this embodiment, the adjustment of the extended portion 8 of each foot 7 is obtainable by adjusting in height each foot 7, by screwing or unscrewing it in the support base 1 of the exercise machine 100.

[0085] In a further embodiment, in combination with any of the preceding ones and shown in Figures 1, 2, 3, 4, 5, 7, 8, 9 and 12, for example, the at least one first fulcrum element 3 comprises a distal end 11 with a substantially semi-cylindrical shape.

[0086] In a further embodiment, alternatively to or in combination with the preceding one, the at least one first fulcrum element 3 comprises a respective distal end 11 with a substantially semi-spherical shape.

[0087] Such a shape advantageously also allows tilting the exercise machine 100 forwards or backwards, transversely to the frame extension plane T, for example.

[0088] In an embodiment, alternatively to the preceding ones and shown in Figures 14A, 14B and 14C, for example, the at least one first fulcrum element 3 comprises a distal end 11 with a substantially polygonal shape (triangular, for example).

[0089] In a further embodiment, shown in Figures 6' and 10', in combination with any of the preceding ones in which the at least one second fulcrum element 3" is provided, the at least one second fulcrum element 3" comprises a respective distal end 11 with a substantially semi-cylindrical shape.

[0090] In a further embodiment, in combination with any of the preceding ones in which the at least one second fulcrum element 3" is provided, the at least one second fulcrum element 3" comprises a respective distal end 11 with a substantially semi-spherical shape.

[0091] Such a shape advantageously also allows tilting the exercise machine 100 forwards or backwards, transversely to the frame extension plane T, for example.

[0092] In an embodiment, alternatively to the preceding ones, the at least one second fulcrum element 3" comprises a distal end 11 with a substantially polygonal shape, triangular for example.

[0093] In a further embodiment, in combination with any of the preceding ones and shown in the drawings, the plurality of feet 7 and the at least one first fulcrum element 3 are connected directly to the support base 1.

[0094] In a further embodiment, alternatively to the preceding one and shown in Figure 15, the exercise machine 100 (not shown in Figure 15) comprises a support base 12 adapted to be reversibly connectable to said support base 1 of the exercise machine 100.

[0095] In greater detail, the support base 12 is reversibly connectable to the lower face of the support base 1 of the exercise machine 100.

[0096] According to this embodiment, the plurality of bumper elements 4 and the at least one first fulcrum element 3 are operatively connected to the support base 12.

[0097] The present invention also relates to a device 150 for simulating a cycling action for an exercise machine 100, in particular exercise or stationary bikes.

[0098] The device 150 is shown in Figure 16.

[0099] As mentioned above, the exercise machine 100 comprises a support base 1 of the exercise machine 100.

[0100] The support base 1 of the exercise machine 100 comprises a lower face 2 facing a support surface S on which the exercise machine 100 is placeable.

[0101] The device 150 comprises a support base 160.

[0102] The support base 160 is configured to be operatively connected to the lower face 2 of the support base 1 of the exercise machine 100.

[0103] The support base 160 further comprises a lower surface 170 which, when the support base 160 is operatively connected to the lower face 2 of the support base 1 of the exercise machine 100, faces the support surface S on which the exercise machine 100 is placeable.

[0104] The device 150 further comprises at least one first fulcrum element 180 operatively connected to the support base 160 and extending from the lower surface 170 of the support base 160 of device 150.

[0105] When the device 150 is operatively connected to the lower face 2 of the support base 1 of the exercise machine 100, it is configured to allow the exercise machine 100 to tilt on the support surface S with respect to said at least one first fulcrum element 180.

[0106] The device 150 further comprises a plurality of bumper elements 190 operatively connected to the support base 160 and extending from the lower surface 170 of the support base 160.

[0107] When the device 150 is operatively connected to the lower face 2 of the support base 1 of the exercise machine 100, the plurality of bumper elements 190 is advantageously compressible during the tilting of the exercise machine 100.

[0108] In an embodiment, in combination with the preceding one, the support base 160 of the device 150 is connectable to the lower face 2 of the support base 1 of the exercise machine 100 by engagement, for example snap-fitting or interlocking, without the use of additional connecting elements.

[0109] In an embodiment, alternatively to the preceding one, the support base 160 of the device 150 is connectable to the lower face 2 of the support base 1 of the exercise machine 100 by employing additional connecting elements, such as screws, magnets, adhesives and the like, and/or a combination thereof.

[0110] With reference to Figures 1-12, 13A and 13B, an operating example of an exercise machine 100 for simulating a cycling action is now described according to an embodiment of the present invention.

[0111] The exercise machine 100 has at least one fulcrum element 3 operatively connected to the support base 1 of the exercise machine 100 and extending from the lower face 2 of the support base 1, which faces the

support surface S, such as a floor, on which the exercise machine 100 is placed.

[0112] The exercise machine 100 comprises a plurality of bumper elements 4 operatively connected to the support base and extending from the lower face 2 of the support base 1.

[0113] The user gets on the exercise machine 100, such as an exercise bike, and starts pedaling, simulating the cycling action with the displacement of his/her center of gravity.

[0114] The exercise machine 100 tilts to the left or right with respect to the at least one first fulcrum element 3 according to the displacement of the user's center of gravity during the pedaling action.

[0115] In the absence of compression of said plurality of bumper elements 4, thus in the absence of a displacement of the user's center of gravity to the left or right with respect to the at least one first fulcrum element 3, the base extension plane B is substantially parallel to the support surface S on which the exercise machine 100 is placed (Figure 13A).

[0116] In the presence of compression of at least one of said plurality of bumper elements 4, thus in the presence of a displacement of the user's center of gravity to the left or right with respect to the at least one first fulcrum element 3, the base extension plane B is tilted with respect to the support surface S on which the exercise machine 100 is placed, by a base inclination angle α having a varying value as a function of the amount of compression of the at least one of said plurality of bumper elements 4 (Figure 13B).

[0117] As can be seen, the object of the invention is fully achieved.

[0118] Indeed, the exercise machine 100 of the present invention allows simulating the cycling action since it is also operable in a tilting mode.

[0119] In particular, the user training on the exercise machine 100 according to the invention, by displacing his/her center of gravity during the pedaling action, tilts the exercise machine 100 with respect to the at least one first fulcrum element 3.

[0120] Moreover, during the tilting of the exercise machine 100, at least one of said plurality of bumper elements 4 is compressed, opposing the tilting of the exercise machine 100, completing the simulation of the cycling action and providing the user with the support required for a correct push on the pedals.

[0121] Moreover, in an embodiment, when the at least one first fulcrum element 3 is operatively connected in the central part of the first portion 5 and/or in the central part of the second portion 6 of the exercise machine 100, the horizontal movement of said first portion 5 and/or said second portion 6 is significantly restricted, preventing undesired movements of the exercise machine 100 which are not only tilting.

[0122] Moreover, in an embodiment, when the exercise machine 100 comprises the plurality of adjustable feet 7, the user can select whether to train on an exercise machine 100 not adapted to tilt by increasing the extension of an extended portion 8 of each foot so as to operate the exercise machine 100 in a first operating configuration which prevents the tilting of the exercise machine 100, or select whether to train on an exercise machine 100 adapted to tilt by decreasing the extension of the extended portion 8 of at least one foot so as to operate the exercise machine 100 in a second operating configuration which promotes the tilting of the exercise machine 100.

[0123] Again, in an embodiment, when the at least one first fulcrum element 3 and, when present, the at least one second fulcrum element 3" comprise a substantially semi-cylindrical distal end 11, the latter is adapted to always come into contact with the ground with a portion thereof during the tilting, irrespective of the inclination of the exercise machine 100.

[0124] The specific shape of the at least one first fulcrum element 3 and/or the at least one second fulcrum element 3" thus serves as a guide for guiding the tilting of the exercise machine with respect to the fulcrum elements 3, 3" themselves.

[0125] Finally, by virtue of the provision of a device 150 for simulating an exercise machine cycling action to be applied to existing exercise machines, such as exercise or stationary bikes, exercise machines not originally designed to tilt can be arranged for simulating the cycling action, with simplicity of application and subsequent savings of time and costs, not only for the installation, but for possible maintenance too.

[0126] In order to meet contingent needs, those skilled in the art may make changes and adaptations to the embodiments of the exercise machine described above or can replace elements with others which are functionally equivalent, without departing from the scope of the following claims. Each of the features described as belonging to a possible embodiment can be implemented irrespective of the other embodiments described.

Claims

1. An exercise machine (100) for simulating a cycling action, comprising:

   - a support base (1) of the exercise machine (100), the support base (1) comprising a lower face (2) facing a support surface (S) on which the exercise machine (100) is placeable;
   - at least one first fulcrum element (3) operatively connected to the support base (1) and extending from the lower face (2) of the support base (1), the exercise machine (100) being configured to tilt on the support surface (S) with respect to said at least one first fulcrum element (3);
   - a plurality of bumper elements (4) operatively connected to the support base (1) and extending from the lower face (2) of the support base (1),

the plurality of bumper elements (4) being compressible during the tilting of the exercise machine (100).

2. An exercise machine (100) according to claim 1, wherein said support base (1) further comprises a first portion (5) at the front part of the exercise machine (100) and a second portion (6) at the rear part of the exercise machine (100).

3. An exercise machine (100) according to claim 2, wherein the at least one first fulcrum element (3) is operatively connected substantially in the center of said first portion (5) of the support base (1).

4. An exercise machine (100) according to claim 3, wherein said plurality of bumper elements (4) comprises at least one first bumper element (4') and at least one second bumper element (4") operatively connected to said first portion (5) of the exercise machine (100) and positioned on opposite sides with respect to said at least one first fulcrum element (3).

5. An exercise machine (100) according to claim 2, wherein the at least one first fulcrum element (3) is operatively connected substantially in the center of said second portion (6) of the support base (1).

6. An exercise machine (100) according to any one of the preceding claims 1 to 4, further comprising at least one second fulcrum element (3") operatively connected to the support base (1) and extending from the lower face (2) of the support base (1), the exercise machine (100) being further configured to tilt on the support surface (S) with respect to said second fulcrum element (3"), the at least one second fulcrum element (3") being operatively connected to said second portion (6) of the support base (1).

7. An exercise machine (100) according to any one of the preceding claims, further comprising a plurality of feet (7) operatively connected to the support base (1), each foot (7) extending from the lower face (2) of the support base (1) over an extended portion (8) up to a free end (9) adapted to come into contact with the support surface (S) of the exercise machine (100),
the extended portion (8) of each foot (7) being adjustable with respect to the support base (1) so that the exercise machine (100) takes:

- a first configuration, in which the support base (1) comes into contact with the support surface (S) of the exercise machine (100) by each free foot end (9), thus preventing the exercise machine (100) from tilting;
- a second configuration, in which the support base (1) comes into contact with the support surface (S) of the exercise machine (100) by at least one of said plurality of bumper elements (4), thus promoting the tilting of the exercise machine (100).

8. An exercise machine (100) according to any one of the preceding claims, comprising a frame (10) mechanically constrained to the support base (1) in an integral manner.

9. An exercise machine (100) according to any one of the preceding claims, wherein said at least one first fulcrum element (3) comprises a distal end (11) with a substantially semi-cylindrical shape.

10. An exercise machine (100) according to claim 6 or any one of the preceding claims 7 to 9, when dependent on claim 6, wherein said at least one second fulcrum element (3") comprises a respective distal end (11) with a substantially semi-cylindrical shape.

11. An exercise machine (100) according to any one of the preceding claims 7 to 9, when dependent on any one of claims 1 to 5, further comprising at least one second fulcrum element (3") operatively connected to the support base (1) and extending from the lower face (2) of the support base (1), the exercise machine (100) being further configured to tilt on the support surface (S) with respect to said second fulcrum element (3'), the at least one second fulcrum element (3") being operatively connected to said second portion (6) of the support base (1), wherein said at least one second fulcrum element (3") comprises a respective distal end (11) with a substantially semi-cylindrical shape.

12. An exercise machine (100) according to any one of the preceding claims, wherein said plurality of feet (3) and the at least one first fulcrum element (3) are connected directly to the support base (1).

13. An exercise machine (100) according to any one of the preceding claims 1 to 11, comprising a support base (12) adapted to be reversibly connectable to said support base (1), said plurality of bumper elements (4) and the at least one first fulcrum element (3) being operatively connected to the support base (12).

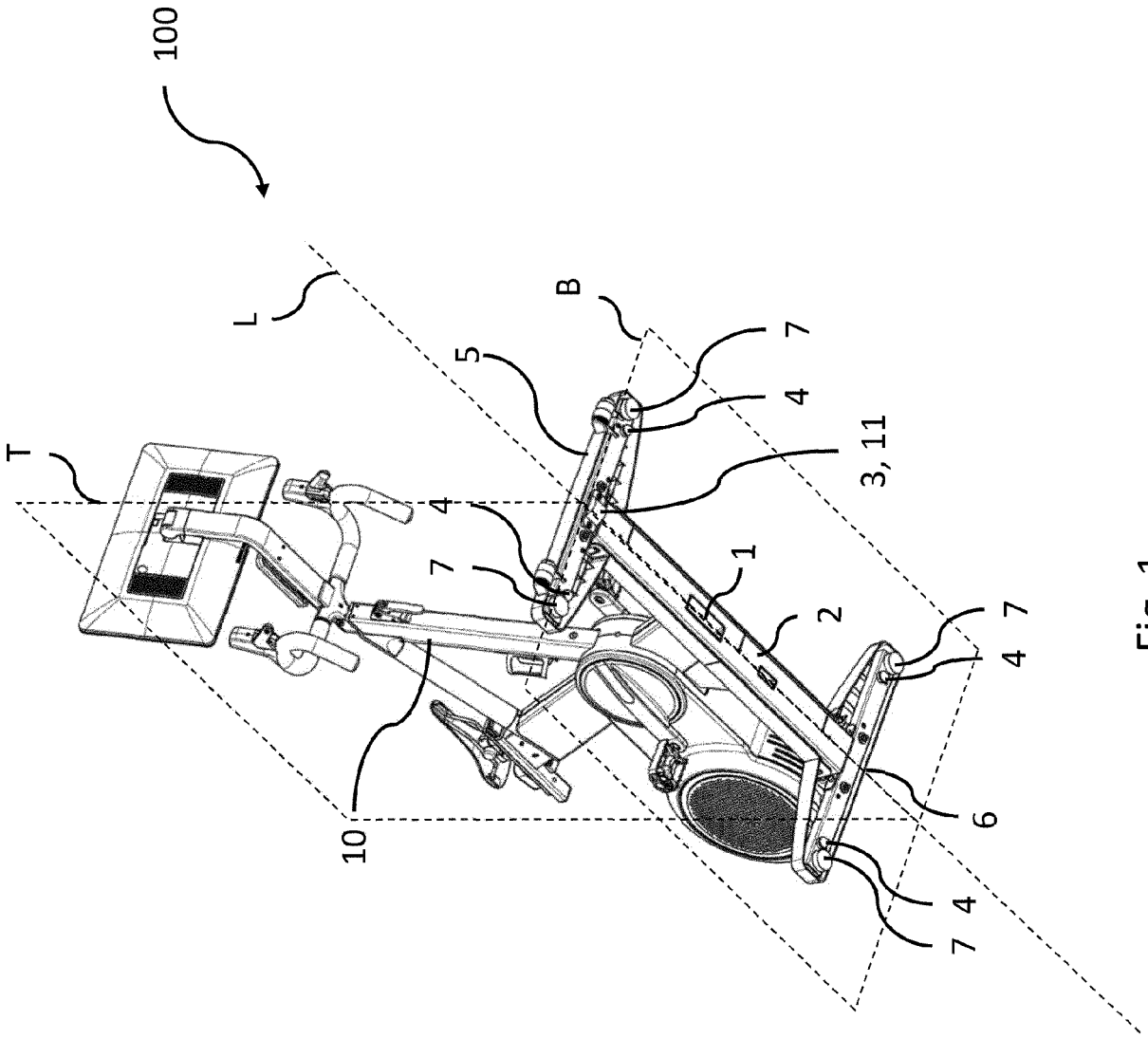

Fig. 1

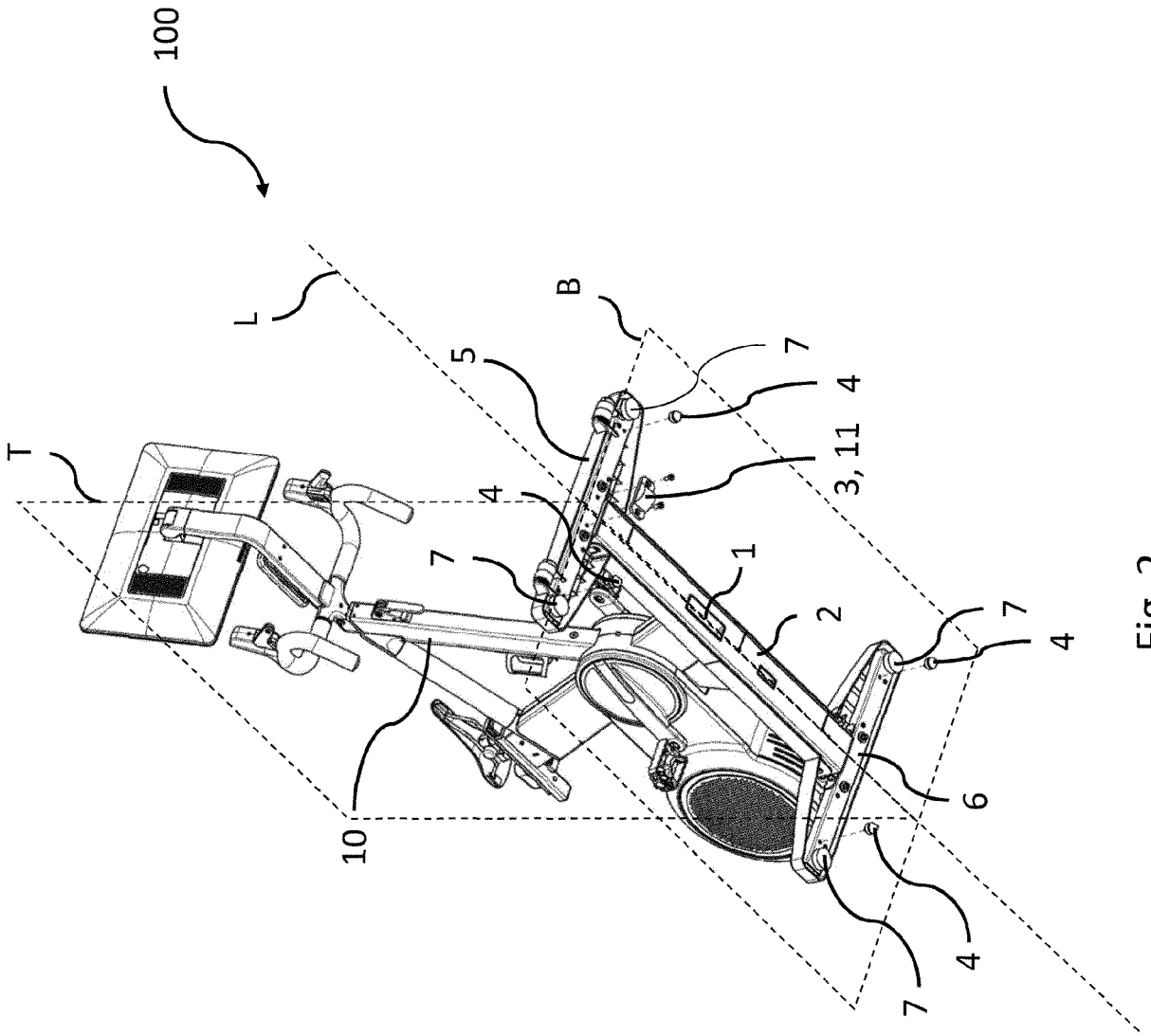

Fig. 2

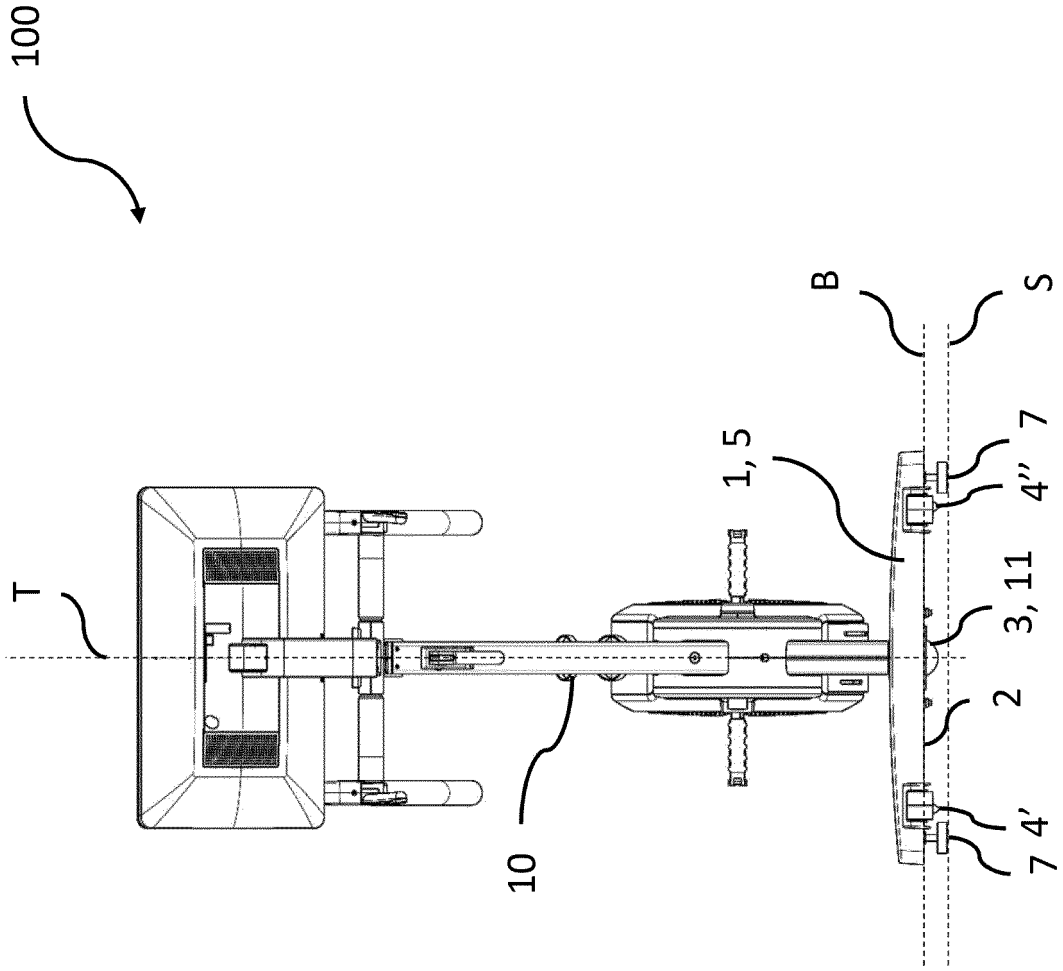

Fig. 3

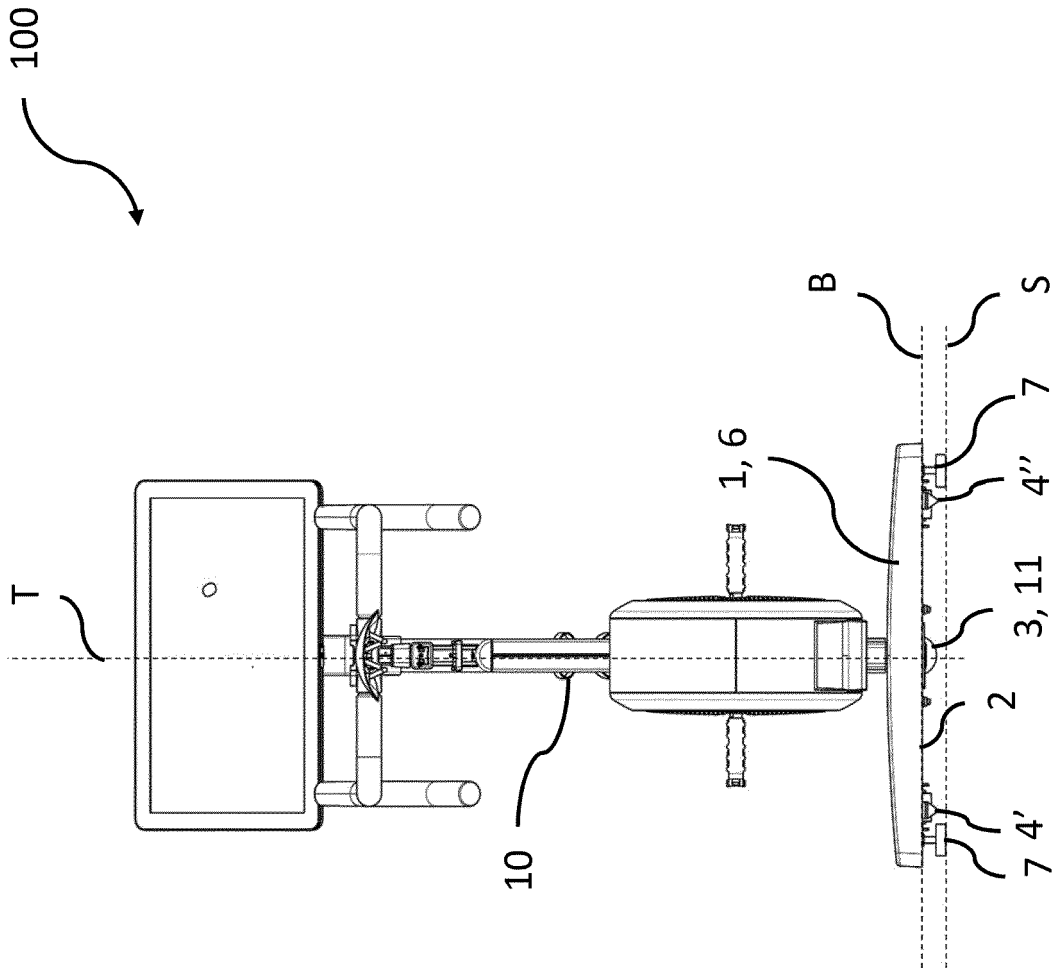

Fig. 4

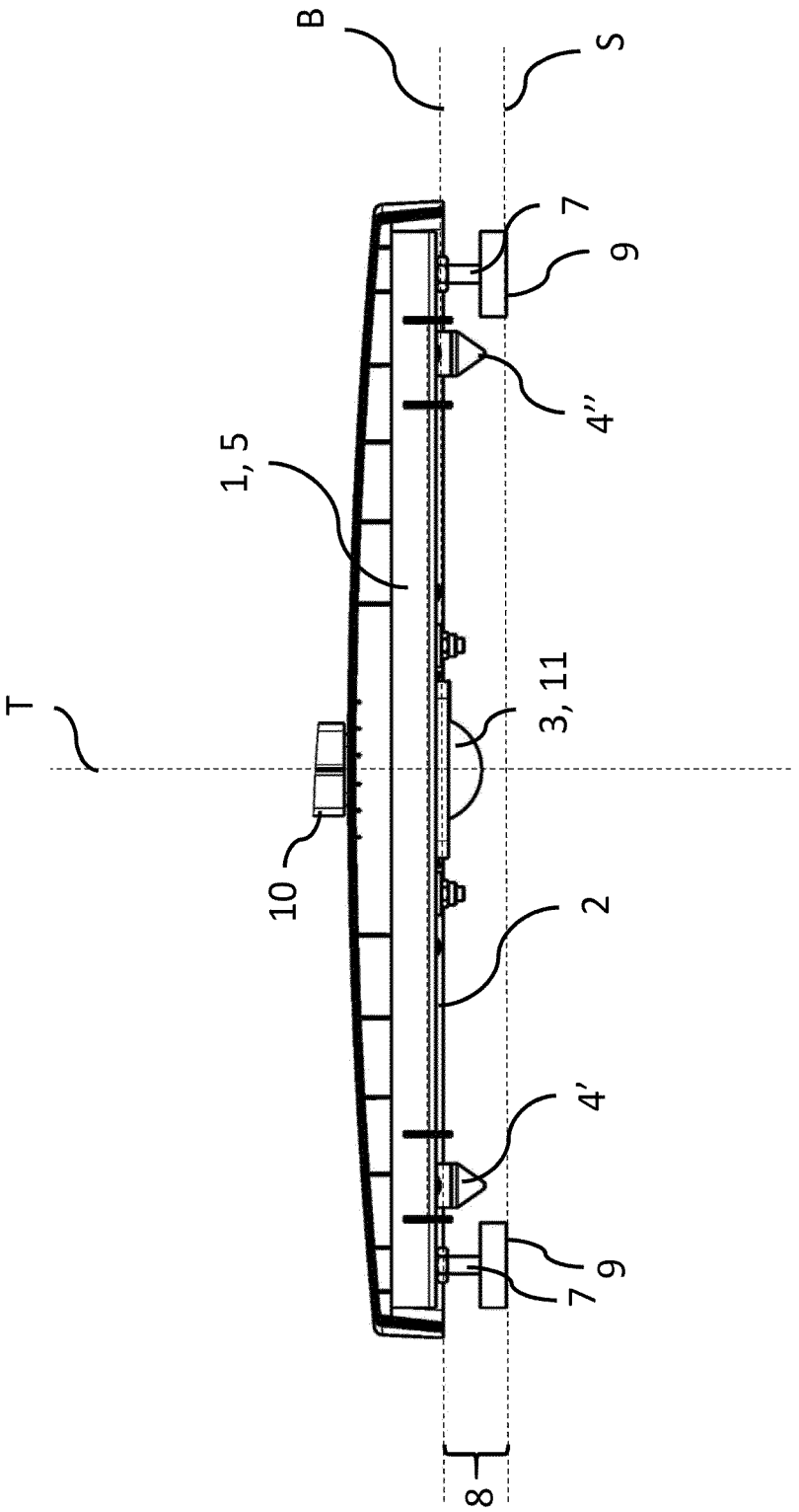

Fig. 5

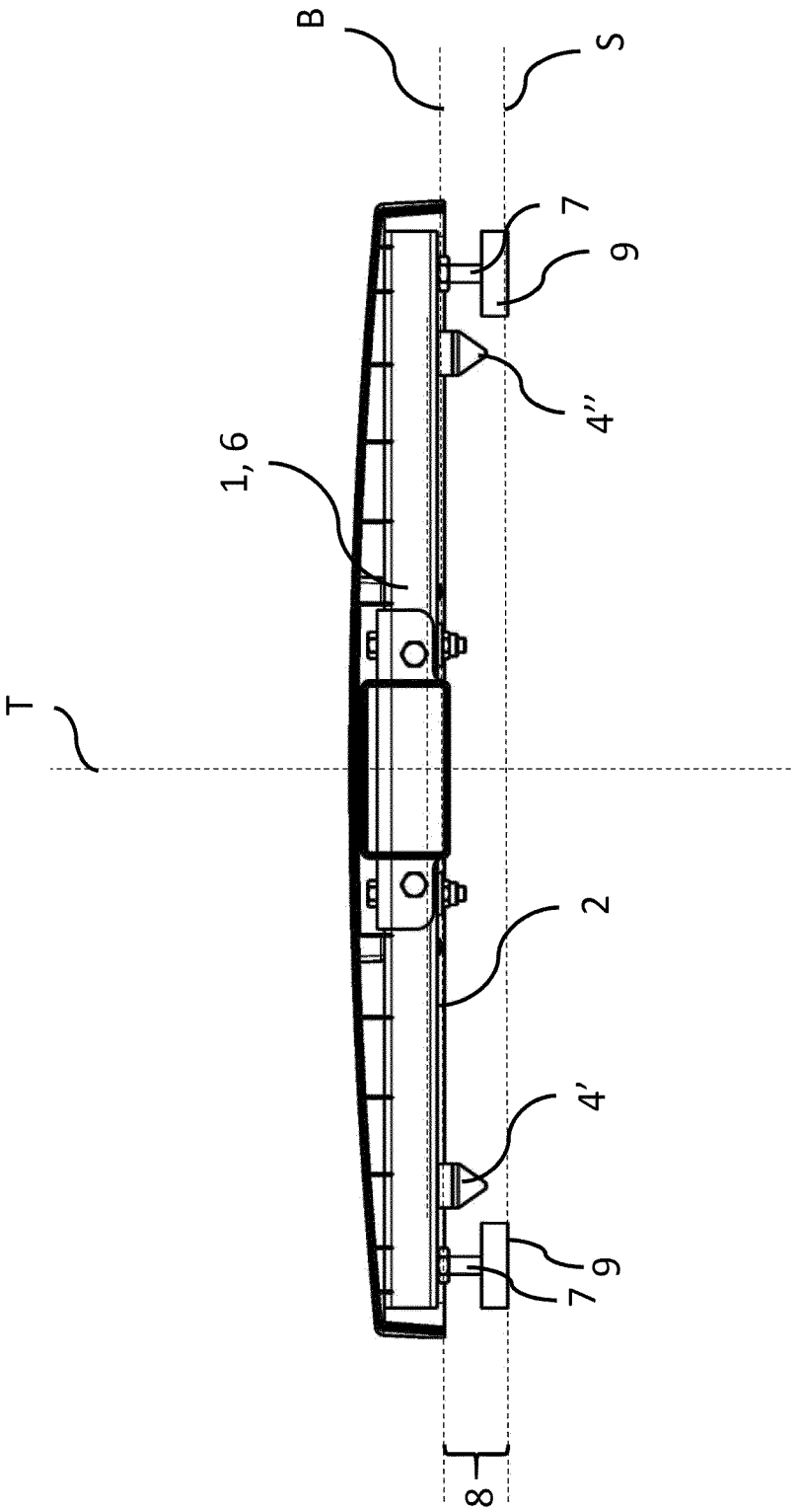

Fig. 6

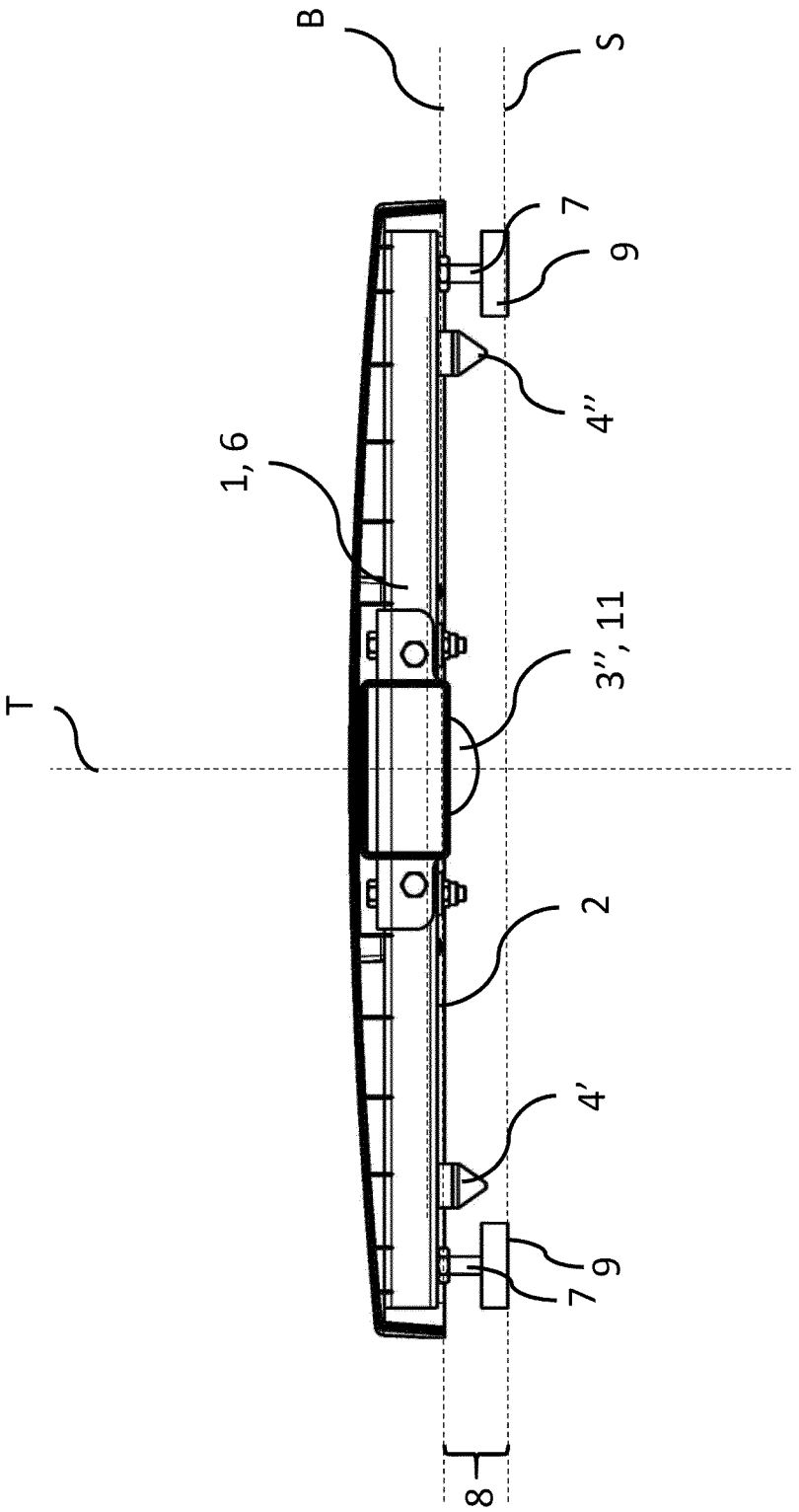

Fig. 6'

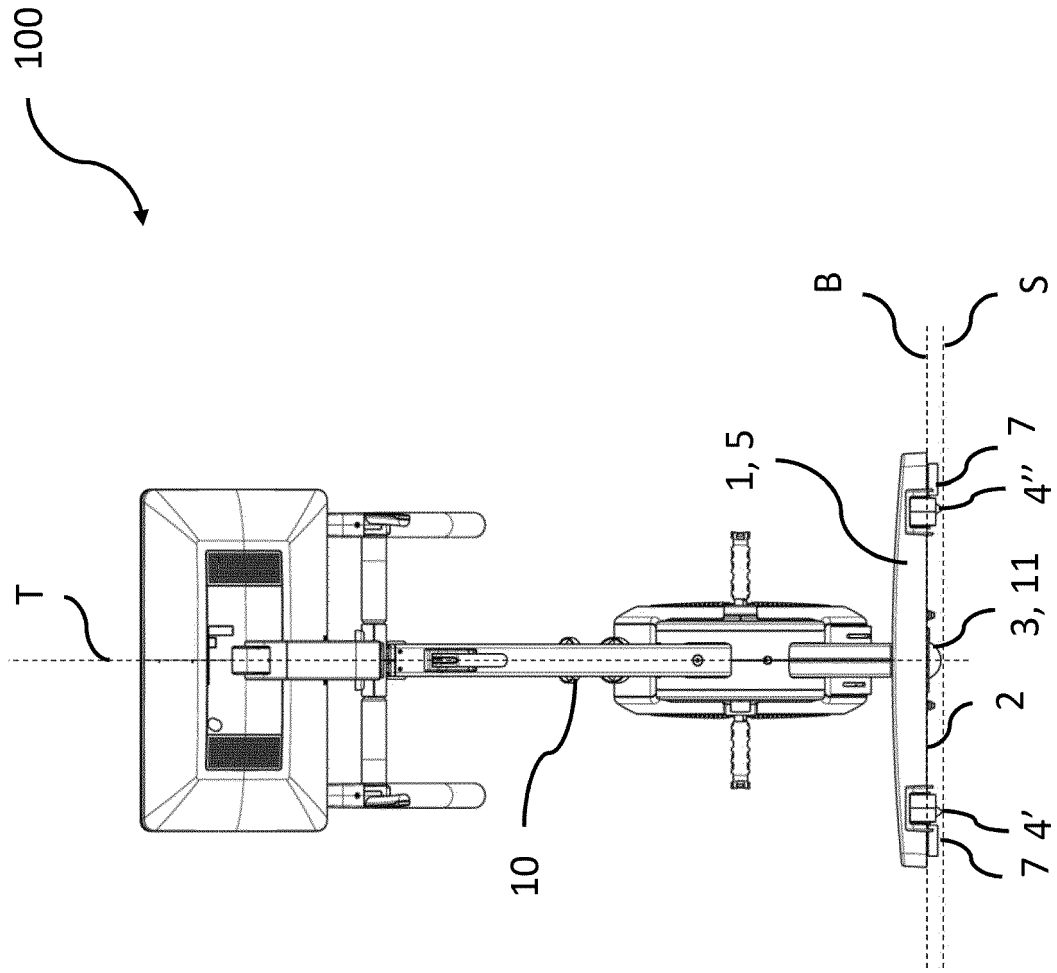

Fig. 7

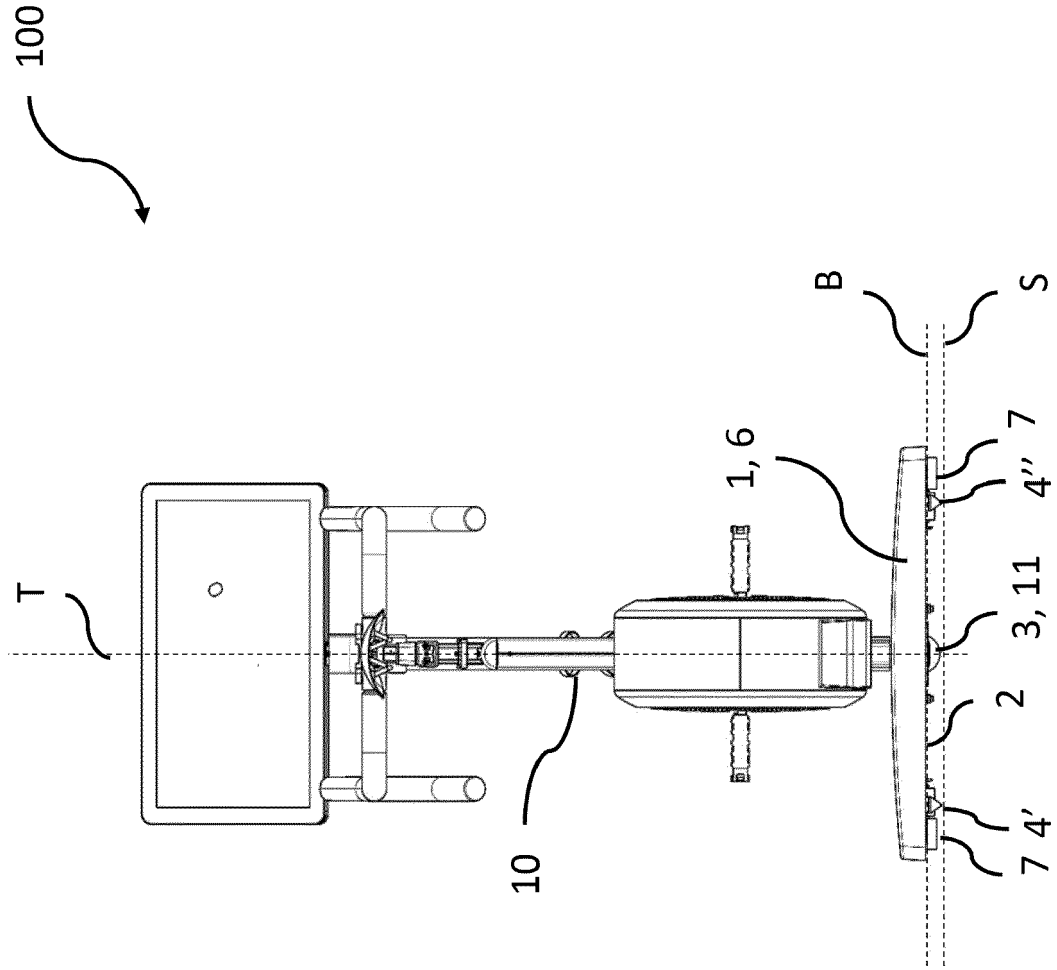

Fig. 8

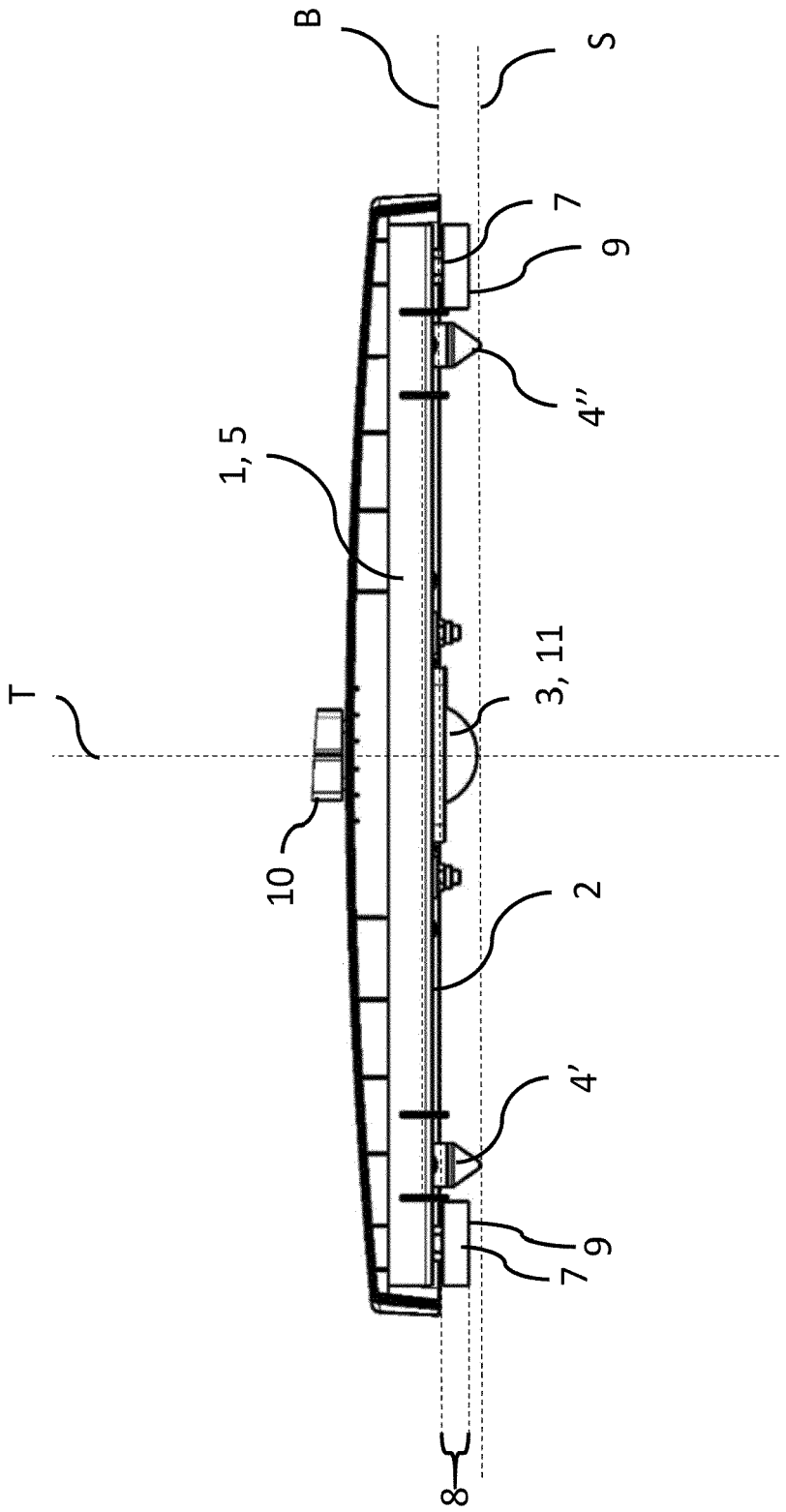

Fig. 9

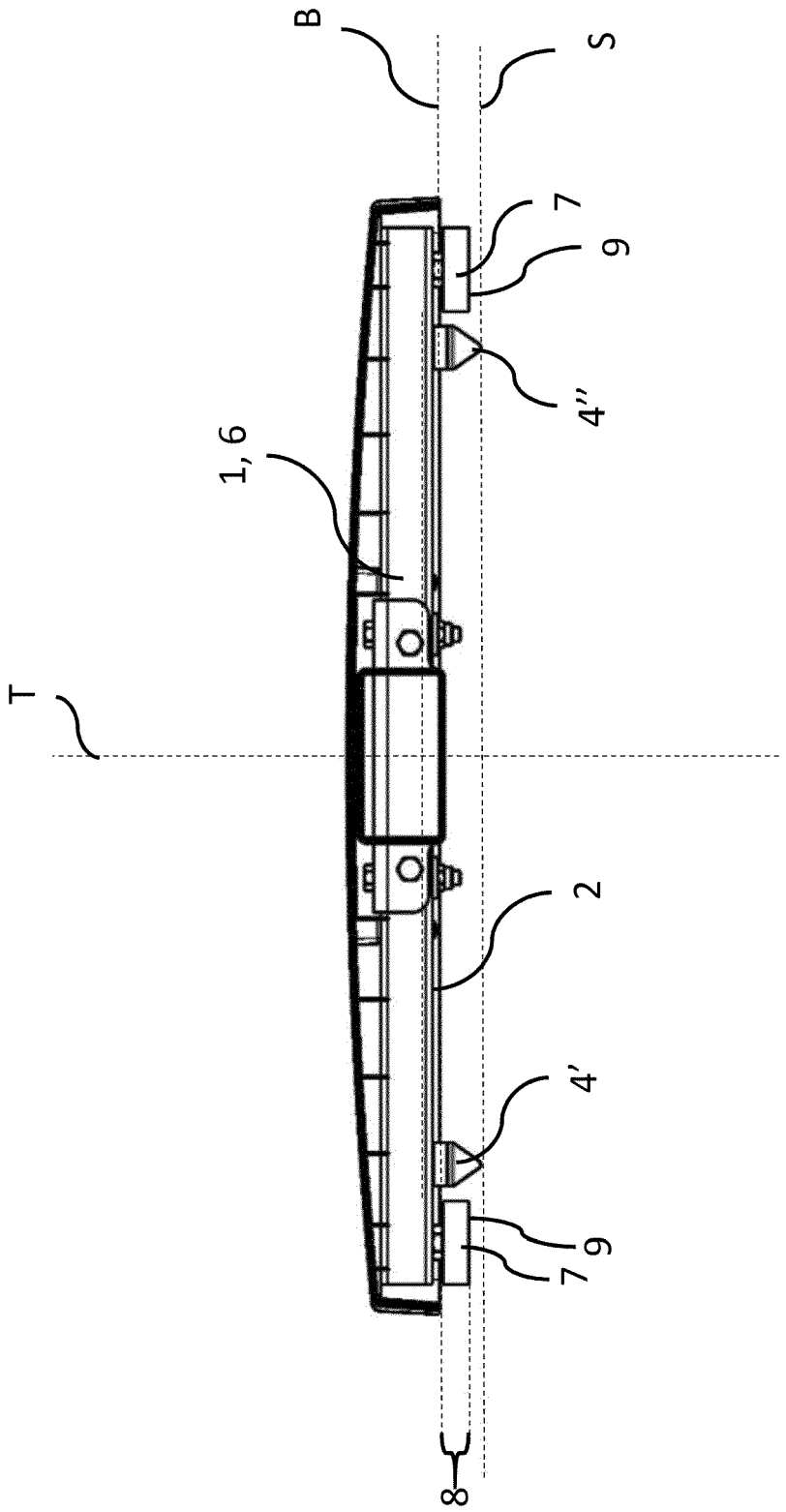

Fig. 10

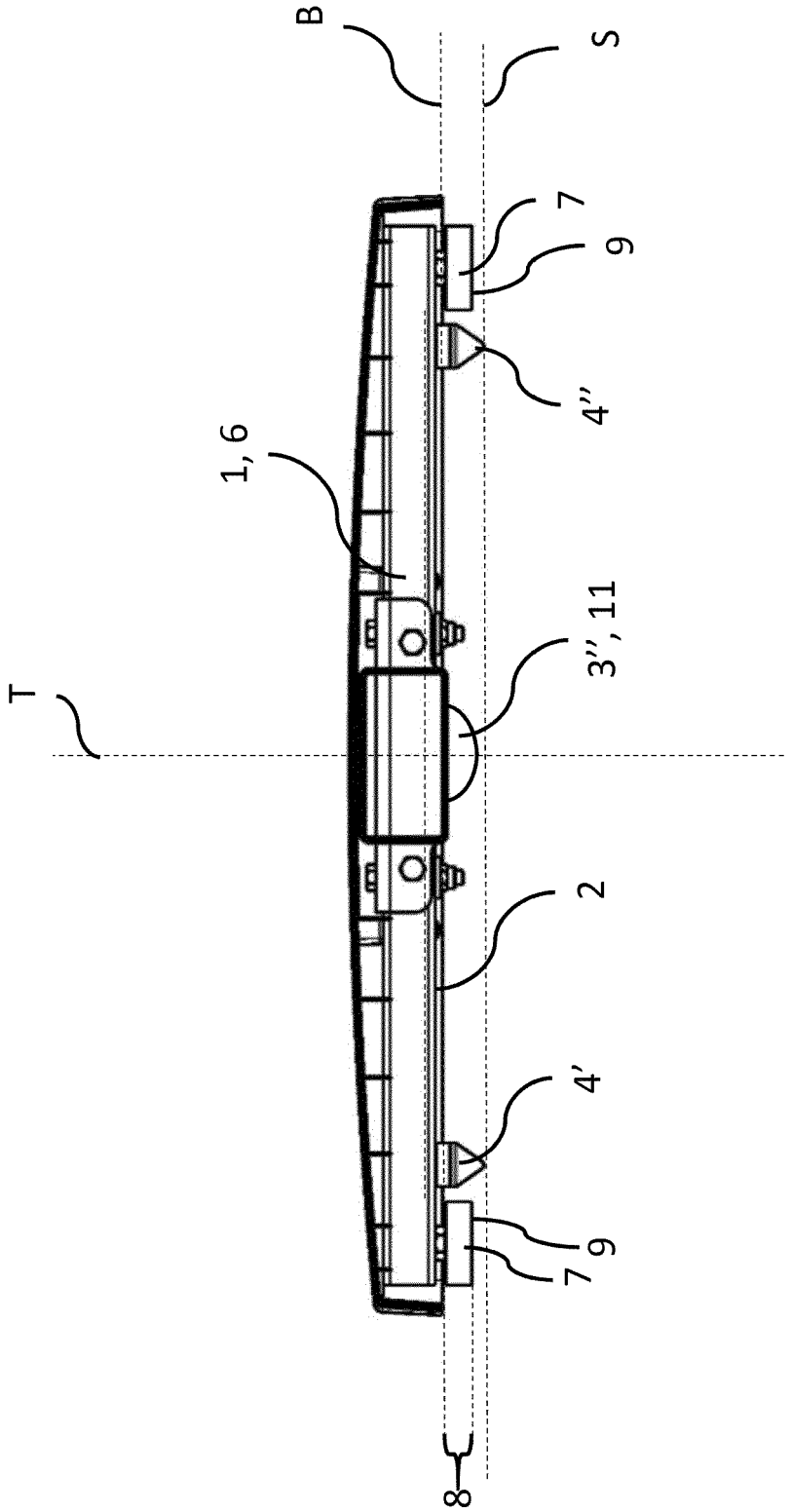

Fig. 10'

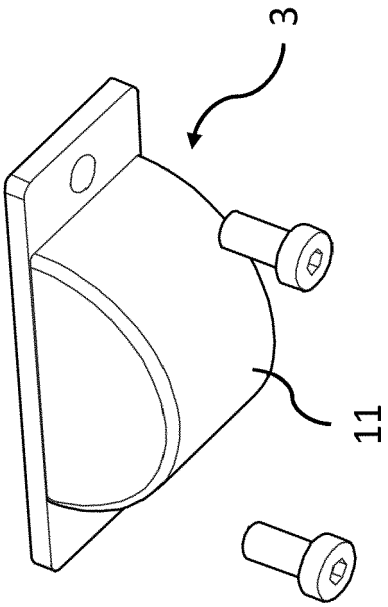

Fig. 12

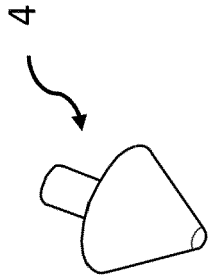

Fig. 11

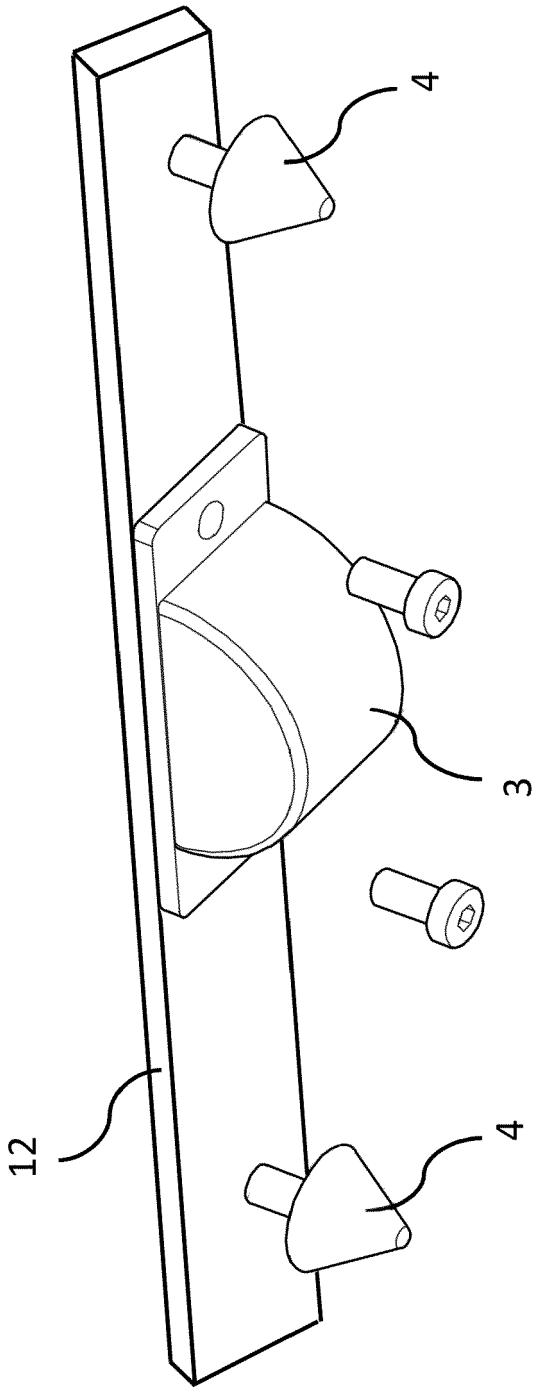

Fig. 15

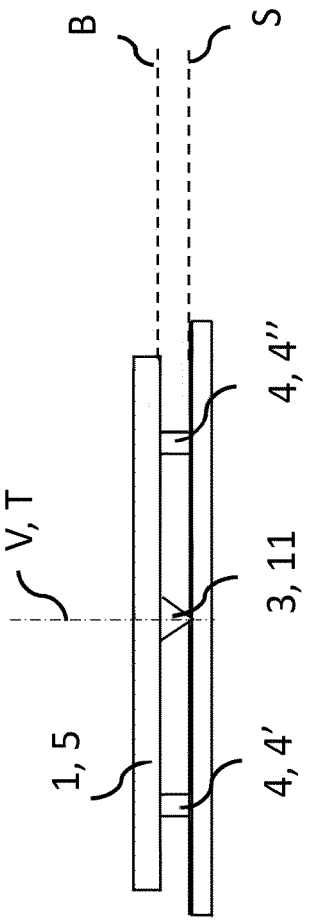

Fig. 13A

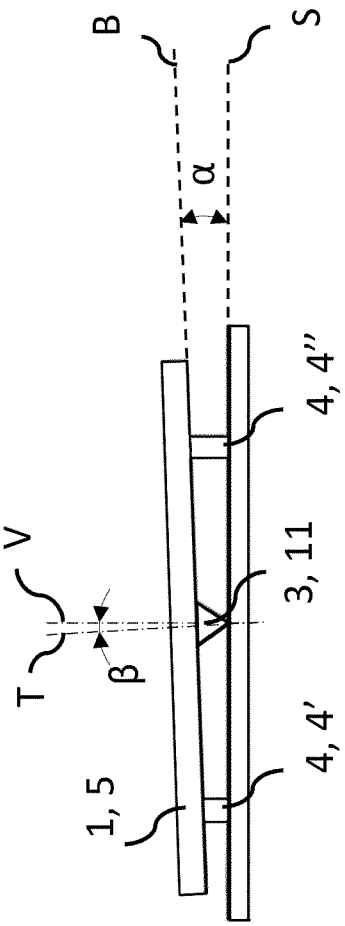

Fig. 13B

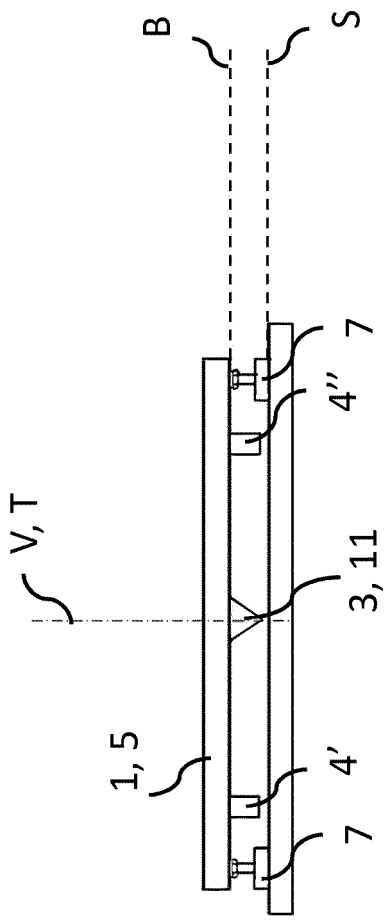

Fig. 14A

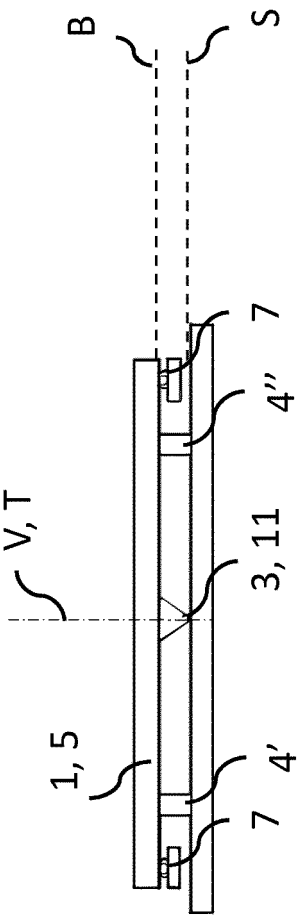

Fig. 14B

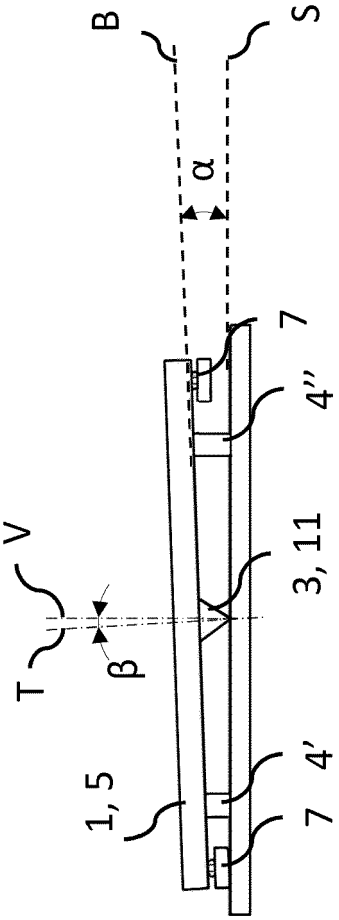

Fig. 14C

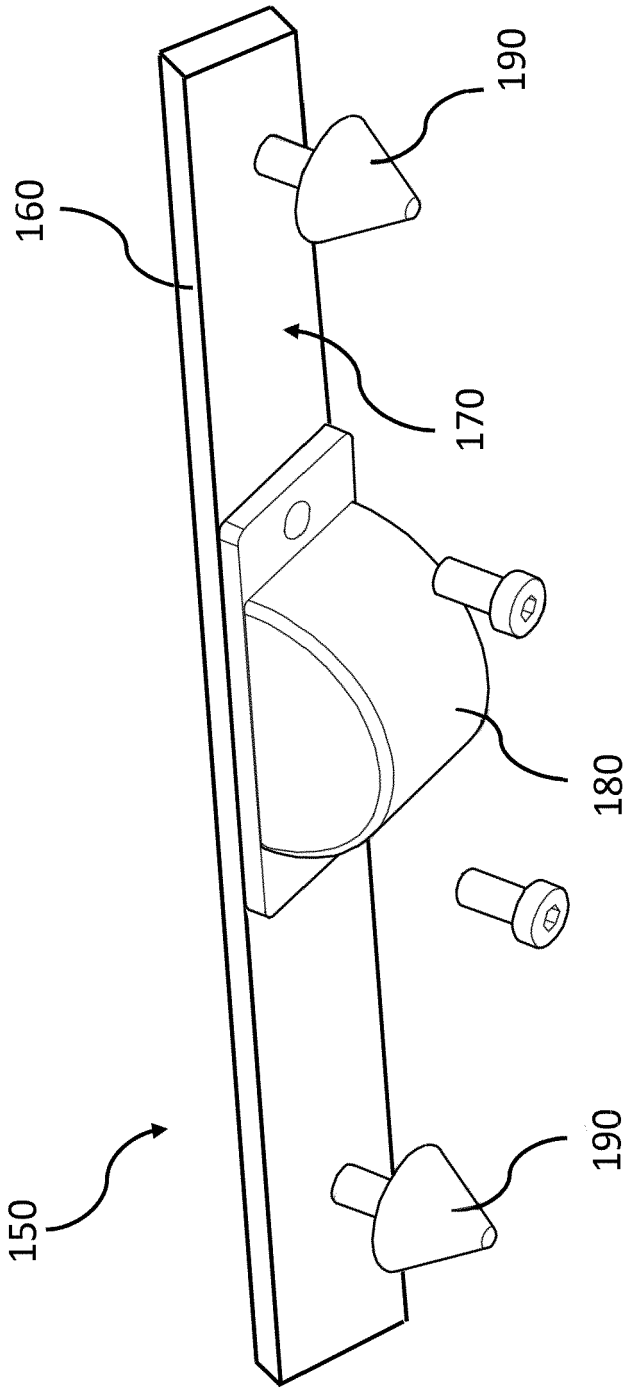

Fig. 16

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EUROPEAN SEARCH REPORT

Application Number
EP 23 17 3668

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2019/118058 A1 (BASS BENJAMIN RAYMOND [US] ET AL) 25 April 2019 (2019-04-25) * paragraph [0099]; figures * * paragraph [0104] - paragraph [0106] *	1-6,8-12	INV. A63B22/06
X	US 2016/287931 A1 (TUNG CHIA LIN [TW]) 6 October 2016 (2016-10-06) * figures *	1-6,8-11	
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A	EP 0 925 809 A1 (GRAMACCIONI FEDERICO [IT]) 30 June 1999 (1999-06-30) * figure 5 *	7	

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A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	12 September 2023	Squeri, Michele

CATEGORY OF CITED DOCUMENTS

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12-09-2023

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