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(71) Applicant: **Gramaccioni, Federico**
31015 Conegliano Veneto (Treviso) (IT)

(72) Inventor: **Gramaccioni, Federico**
31015 Conegliano Veneto (Treviso) (IT)

(74) Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti
Dott.Prof. Franco Cicogna
Via Visconti di Modrone, 14/A
20122 Milano (IT)

(54) Physical exercise device simulating the use of a bicycle

(57) The present invention relates to a physical exercise device simulating the use of a bicycle.

The device comprises a frame including a seat, a handlebar as well as a pair of pedals, simulating a bicycle.

The device frame further comprises supporting means allowing the frame to swing, in operation, in its longitudinal middle plane and/or transversely of the longitudinal middle plane thereof.

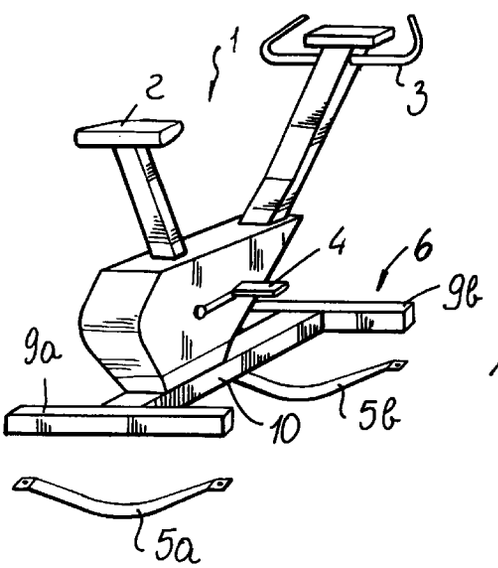

FIG. 1

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Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a physical exercise device simulating the use of a bicycle.

[0002] Physical or gymnastic devices or implements, provided with pedals allowing a user to pedal with physical movements like those of a bicycle, are already known.

[0003] These prior devices or implements conventionally comprise a supporting frame, which supports a seat, a handlebar as well as a pair of pedals, which elements are arranged with an arrangement similar to that of the seat, handlebar and pedals of a conventional bicycle.

[0004] However, this bicycle-like frame, instead of including wheels, is provided with a supporting base statically supported on a floor, so as to allow a user to perform, even in a comparatively small size closed room, gymnastic exercises, like those performed in cycling.

[0005] The above mentioned bicycle-like devises or implements are broadly diffused since they allow to perform, at any desired times, physical or gymnastic exercises, like those performed on a bicycle, without compelling the user to follow high traffic roads, and without the effects of meteorological agents.

[0006] On the other hand, notwithstanding the above mentioned advantages, the mentioned prior physical exercise devices have the drawback that they do not allow to exercise all of the body muscles which, on the contrary, would be properly exercised on a conventional bicycle.

[0007] In fact, since the construction of the prior devices is of a static type, the exercises performed thereon do not involve all of the body muscles which are involved in the use of a conventional bicycle, for example the muscles allowing the bicycle to be held in a balanced or equilibrium condition, both in a vertical attitude and in a slanted attitude, for example on curved portions of roads and the like.

[0008] In this connection it should be apparent that in a slanted position, which can not be assumed in the mentioned prior devices, the body muscles would operate in a different manner from the operation in a vertical attitude.

SUMMARY OF THE INVENTION

[0009] Accordingly, the aim of the present invention is to solve the above mentioned problem, by providing a physical exercise device or implement adapted to fully simulate the use of a conventional bicycle, thereby allowing to properly exercise all of the muscles which are usually involved in the use of a conventional bicycle.

[0010] Within the scope of the above mentioned aim, a main object of the present invention is to provide such a physical exercise device which is also adapted to exercise those body muscles which, in the use of a conventional bicycle, cooperate to hold the bicycle in an equilibrium condition, both as the bicycle is driven on a rectilinear road and as it is driven on curved parts of the road.

[0011] Another object of the present invention is to provide such a physical exercise device which is very safe and reliable in operation.

[0012] Yet another object of the present invention is to provide such a physical exercise device which can be easily used in comparatively small size closed rooms.

[0013] According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a physical exercise device, adapted to simulate the use of a bicycle, characterized in that said device comprises a supporting frame supporting a seat, a handlebar and a pair of pedals, simulating a bicycle.

[0014] Said supporting frame further comprises supporting means adapted to allow said supporting frame to swing, in a use condition thereof, in its longitudinal middle plane and/or transversely of said longitudinal middle plane.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Further characteristics and advantages of the physical exercise device according to the present invention will become more apparent hereinafter from the following detailed disclosure of some preferred, though not exclusive, embodiments of said device which is illustrated, by way of an indicative, but not limitative, example, in the figures of the accompanying drawings, where:

Figure 1 is a perspective view illustrating a first embodiment of the physical exercise device according to the invention, in which the supporting means comprises a pair of curved elements, coupled at the bottom to the frame of the device;

Figure 2 is a further perspective view illustrating a second embodiment of the subject physical exercise device, in which the supporting means comprise a curved supporting element, connected to the bottom of the device frame;

Figure 3 is a further perspective view illustrating a third embodiment of the subject physical exercise device, similar to that shown in Figure 1, in which the pair of curved elements is directly formed on the base of the device frame;

Figure 4 is a further perspective view illustrating a fourth embodiment of the subject physical exercise device, including means for limiting the swinging

movement of the device;

Figure 5 is a further perspective view illustrating yet another embodiment of the invention, including modified means for limiting the device swinging movement;

Figure 6 is a further perspective view illustrating yet another embodiment of the subject physical exercise device, the supporting means thereof being shown in an exploded form;

Figure 7 is yet another perspective view illustrating a further embodiment of the physical exercise device according to the invention;

Figure 8 is yet another perspective view illustrating a further embodiment of the physical exercise device according to the invention;

Figure 9 is yet another perspective view illustrating yet another embodiment of the physical exercise device according to the invention, in which the supporting means comprise resilient means;

Figure 10 is a further perspective view illustrating yet another embodiment of the physical exercise device according to the invention;

Figure 11 is yet another perspective view illustrating a further embodiment of the physical exercise device according to the present invention, in which the supporting means allow the device to swing both longitudinally and transversely;

Figure 12 is a side elevation view illustrating a detail related to the base of the subject physical exercise device shown in Figure 11;

Figure 13 is a front elevation view illustrating a detail related to the base of the physical exercise device or implement shown in Figure 11; and

Figure 14 is a bottom plan view illustrating the base of the physical exercise device or implement shown in Figure 11.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] With reference to the number references of the above mentioned drawing figures, the physical exercise device or implement, according to the present invention, comprises a supporting frame 1, which includes a seat 2, a handlebar 3 as well as a pair of pedals 4, which elements are arranged likewise to the arrangement of the seat, handlebar and pair of pedals of a conventional bicycle.

[0017] Thus, the frame 1 is substantially made as the prior implements simulating a bicycle.

[0018] However, differently from prior bicycle like devices, the frame 1 of the device according to the invention is provided with supporting means, allowing the frame 1 to swing, in operation, in its longitudinal middle plane and/or transversely of said longitudinal middle plane.

[0019] As is clearly shown in Figure 1, said supporting means can comprise a pair of curved elements 5a and 5b which have their bottom end portions coupled to the base 6 of the frame 1 and being arranged transversely of the longitudinal middle plane of said frame 1.

[0020] The two curved elements 5a and 5b are arranged parallel to one another and are spaced from one another along the longitudinal extension of the frame 1.

[0021] The two curved elements 5a and 5b bear by their curved size on the floor, so as to allow, in operation, the supporting frame 1 to swing transversely of its longitudinal middle plane.

[0022] As is clearly shown in Figure 3, the curved elements, which in this figure have been indicated by the reference numbers 7a and 7b, can be directly formed in the base 6 of the supporting frame 1.

[0023] Figure 2 illustrates another embodiment in which the supporting means of said frame 1, which, likewise to the embodiments shown in Figures 1 and 3 will allow the frame 1 to swing transversely of its longitudinal middle plane, comprise a curved supporting element 8, bearing by its curved side against the floor and being connected at the bottom to the base 6.

[0024] During the operation of the embodiment shown in Figure 2, the swinging of the frame 1 is obtained, instead of using a pair of curved elements 5a, 5b or 7a, 7b, by a continuous curved surface, the curvature axis thereof substantially lies in the longitudinal middle plane of the frame 1.

[0025] The base 6 is preferably formed by a pair of cross members 9a, 9b, parallel to one another and spaced from one another along the longitudinal extension of the frame 1, and being coupled at the central portion thereof by a longitudinal middle beam 10.

[0026] In the embodiment shown in Figure 6, the supporting means comprise a cup-like member 11 which is coupled, by its base, to the bottom of a plate 12, in turn connected under the base 6.

[0027] The cut-like element 11 is preferably coupled to a central region of the base 6, so as to allow the implement frame to swing in any desired directions.

[0028] In Figure 7, the supporting means comprise a pair of cup-like elements 13a and 13b, which are coupled at the bottom thereof to the base 6 and being spaced from one another along the longitudinal extension of the implement.

[0029] In Figure 8, the base 6 is pivoted to the bearing foot elements 14a and 14b about a pivot axis 15, which is substantially horizontal and lies in the longitudinal

middle plane of the frame 1, so as to allow said frame 1 to swing about said pivot axis 5.

[0030] Figure 9 illustrates another embodiment in which the swinging movement of the frame 1, both longitudinally and transversely, as well as in a composite manner with respect to the mentioned two swinging directions, is obtained by four resilient bearing foot elements, comprising springs 16 spaced from one another and from the longitudinal middle plane, as well as from the transversal or cross middle plane of the frame 1.

[0031] Figure 10 illustrates yet another embodiment, similar to that shown in Figure 2, where the supporting means comprise a curved supporting element 17 which, in this case, is provided with a curvature axis perpendicular to the longitudinal middle plane of the frame 1.

[0032] Figures 11 to 14 illustrate yet another embodiment of the physical exercise device according to the present invention, in which the supporting means comprise a pair of curved supporting elements 18 and 19 which are diagonally coupled at the bottom of the base 6, so as to define two curved bearing surfaces for the base 6.

[0033] The curved supporting elements 18 and 19 cross one another at a central vertical axis of the frame 1 and define two bearing curved surfaces, having curvature axes respectively parallel and perpendicular to the longitudinal middle plane of the frame 1, to allow said frame 1 to swing both in its longitudinal middle plane and transversely of said longitudinal middle plane.

[0034] The physical exercise device according to the present invention further comprises limiting means for limiting the swinging amplitude of the frame 1.

[0035] Said swinging amplitude limiting means can merely comprise, as shown in Figure 3, side extensions of the cross members 9a and 9b of the base 6, or they can also comprise suitable extensions 20, 21 coupled to the end portions of the cross members 9a and 9b of the base 6, as shown in Figures 4 and 8.

[0036] In Figure 5, in addition to the extensions 20, side bearing foot elements 22 are moreover provided, said side bearing foot elements being coupled to the extensions 20 and projecting at the bottom thereof.

[0037] The foot elements 22, in a vertical equilibrium condition of the frame 1, are spaced from the floor, and they can be of a height adjustable type, in order to allow the swinging amplitude of the frame 1 to be easily adjusted or changed.

[0038] In the embodiment shown in Figure 8 springs 23 are provided to counter-bias the swinging movement in a set direction, or in another set direction, of the frame 1 about the pivot axis 15.

[0039] From the above disclosure and from the figures of the accompanying drawings, it should be apparent that the invention fully achieves the intended aim and objects.

[0040] In particular, the fact is to be pointed out that a physical exercise device or implement has been provided which, owing to the capability thereof of swinging longitudinally, transversely, or in a composite manner along the two mentioned swinging directions, would allow all of the body muscles to be exercised or affected, likewise in a conventional type of bicycle.

[0041] While the invention has been disclosed and illustrated with reference to several embodiments thereof, it should be apparent that the disclosed embodiments are susceptible to many modifications and variations, all of which will come within the scope of the appended claims.

Claims

1. A physical exercise device, for simulating a use of a bicycle, characterized in that said device comprises a device frame including a seat, a handlebar and a pair of pedals simulating a bicycle, said frame further comprising supporting means for allowing said frame to swing, in use, from a longitudinal middle plane thereof and/or transversely of said longitudinal middle plane thereof.

2. A device according to Claim 1, characterized in that said supporting means comprise a pair of curved elements having end portions thereof coupled to a bottom of said frame, said curved elements being arranged transversely of said longitudinal middle plane and being spaced from one another along a longitudinal extension of said frame.

3. A device according to Claim 2, characterized in that said pair of curved elements is directly formed in a base of said frame.

4. A device according to Claim 2, characterized in that said supporting means comprise a supporting element curved at a bottom thereof and coupled, at said bottom thereof, to said frame, and that said curved supporting element has a curvature axis thereof arranged on said longitudinal plane.

5. A device according to claim 2, characterized in that said supporting means comprise a supporting element, curved at a bottom thereof, and coupled at said bottom thereof to said frame, and that said curved supporting element has a curvature axis thereof arranged substantially perpendicular to said longitudinal middle plane.

6. A device according to Claim 2, characterized in that said supporting means comprise a cup-like element, having a base thereof coupled to a central region of said base of said frame.

7. A device according to Claim 2, characterized in that said supporting means comprise two cup-like elements, having a base thereof coupled to the bottom of the base of the frame, said two cup-like elements

being spaced from one another along the longitudinal extension of said frame.

8. A device according to Claim 7, characterized in that said base of said frame comprises a pair of cross-members, parallel to one another and coupled by a longitudinal middle beam.

9. A device according to Claim 1, characterized in that said frame is pivoted to bearing foot elements about substantially horizontal pivot axis lying in said longitudinal middle plane.

10. A device according to Claim 2, characterized in that said supporting means comprise a pair of curved supporting elements, connected to the bottom of the base of the frame and crossing one another at a central vertical axis of said frame, said curved supporting elements defining two curved bearing surfaces having curvature axes respectively parallel and perpendicular to said longitudinal middle plane.

11. A device according to Claim 1, characterized in that said device further comprises means for limiting the swinging amplitude of said frame.

12. A device according to Claim 11, characterized in that said limiting means comprise side extensions for said cross members of said base of said frame.

13. A device according to Claim 12, characterized in that said side extension elements are provided with bearing foot elements which, under a vertical equilibrium condition of said frame, are spaced above the floor and the height of which can be adjusted.

14. A device according to Claim 1, characterized in that said device further comprises resilient means hindering the swinging movement of said frame about said pivot axis thereof.

15. A device according to Claim 1, characterized in that said frame is provided, at a bottom thereof, with resilient bearing foot elements laterally spaced on opposite portions with respect to said longitudinal middle plane and said transversal middle plane of said frame.

16. A device according to Claim 15, characterized in that said resilient bearing foot elements comprise springs coupled at the bottom to the cross-members of said base of said frame, at their end portions.

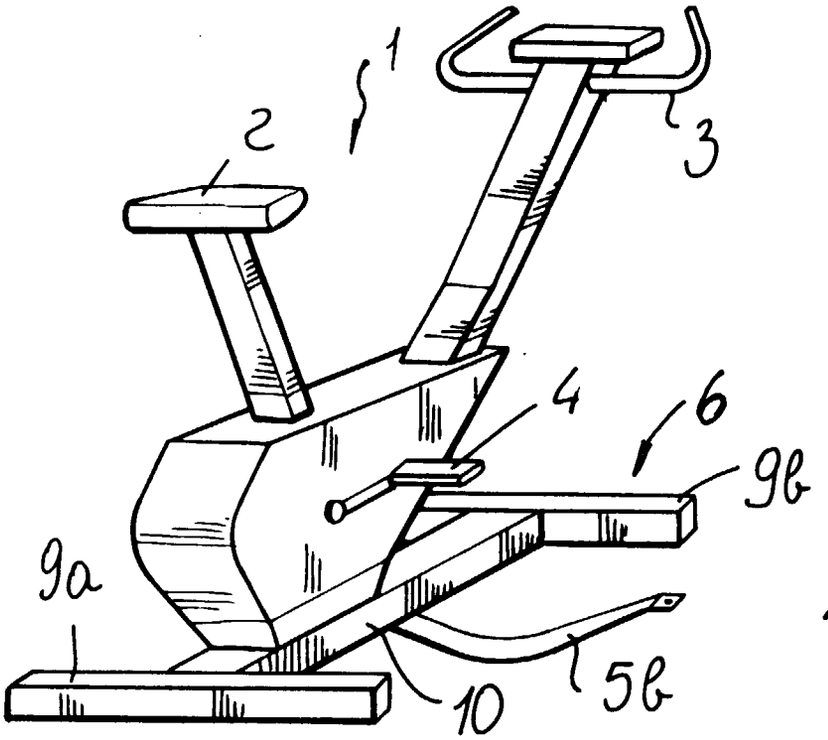
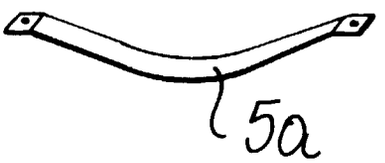


FIG. 1



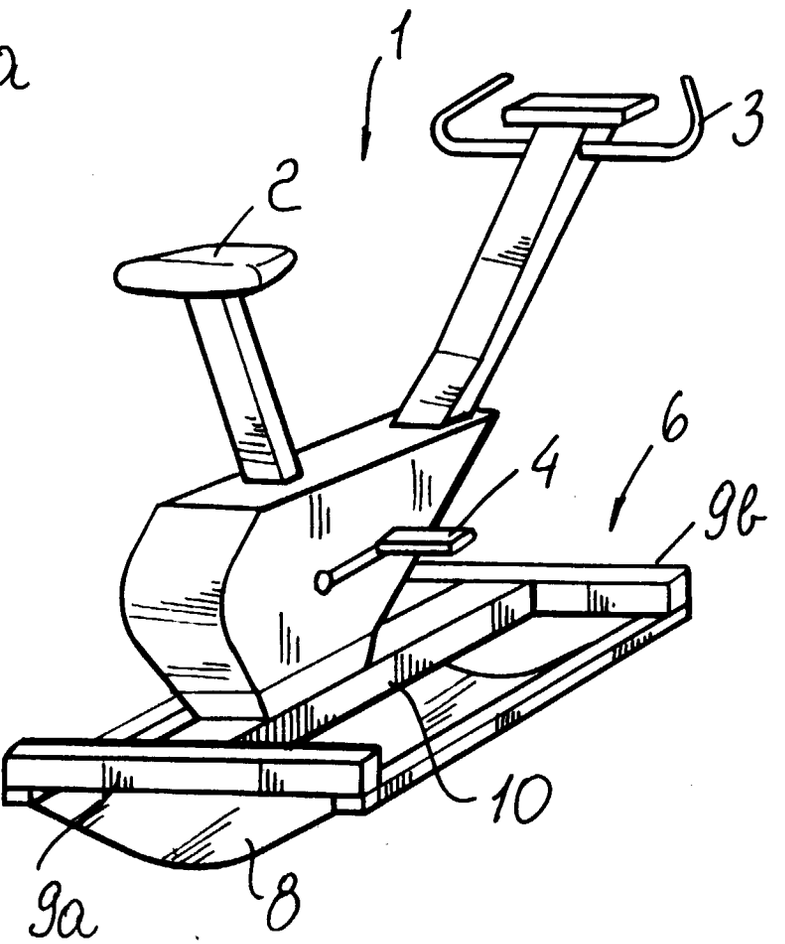


FIG. 2

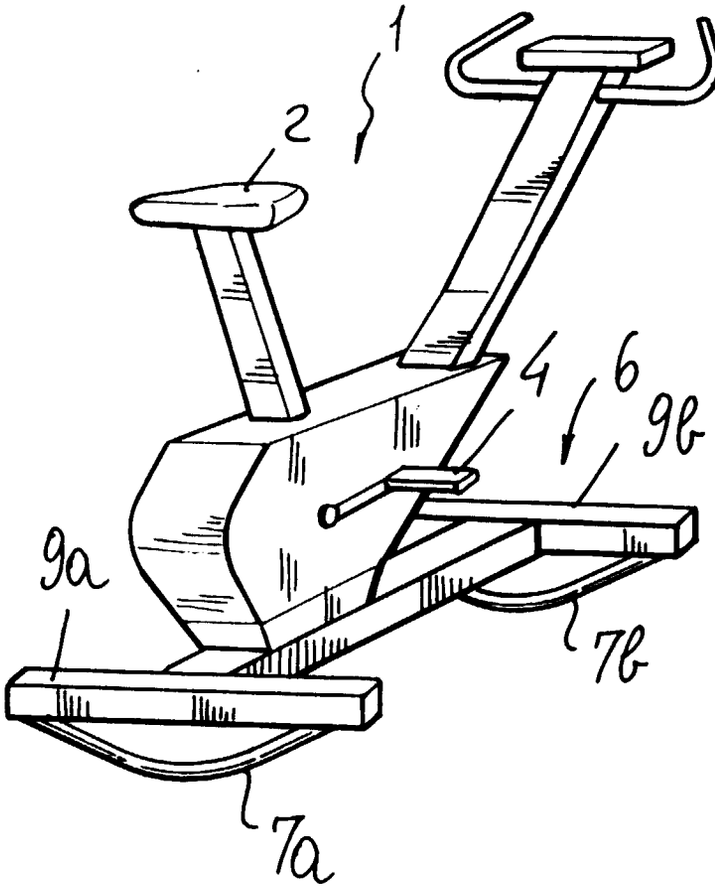


FIG. 3

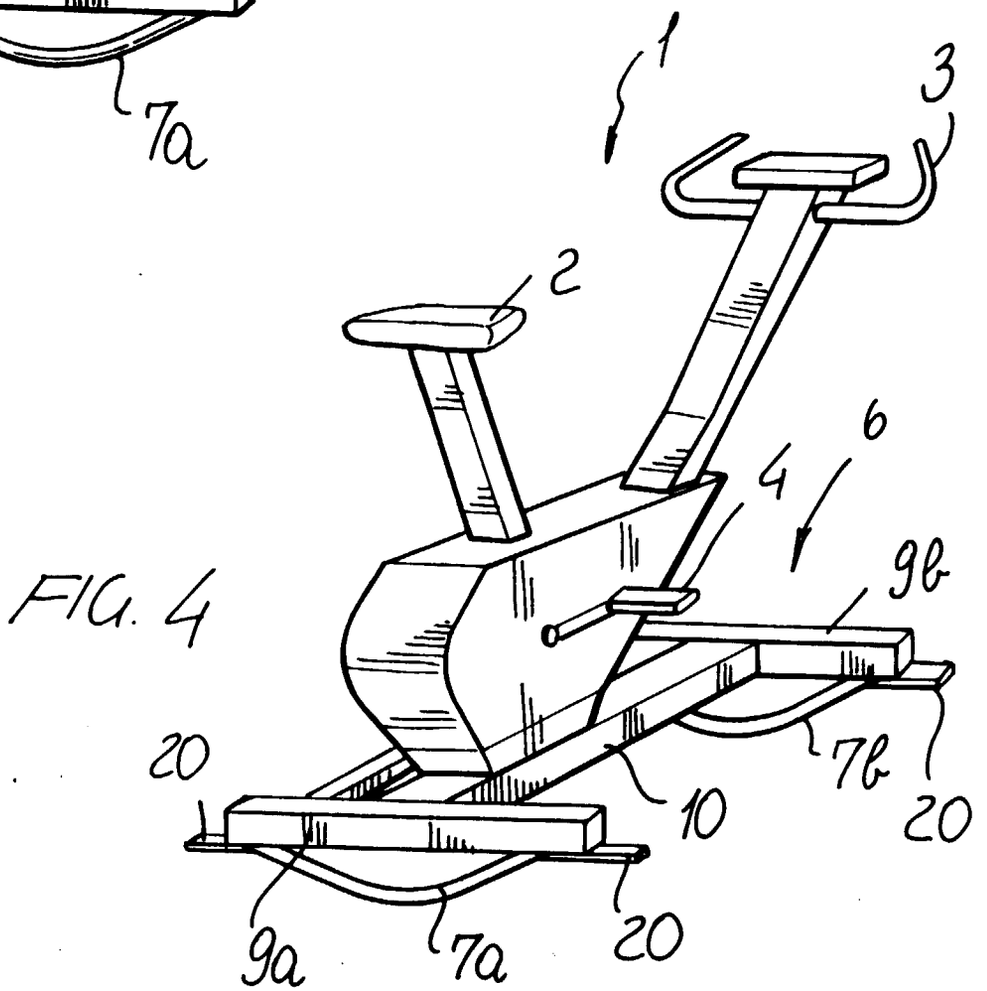


FIG. 4

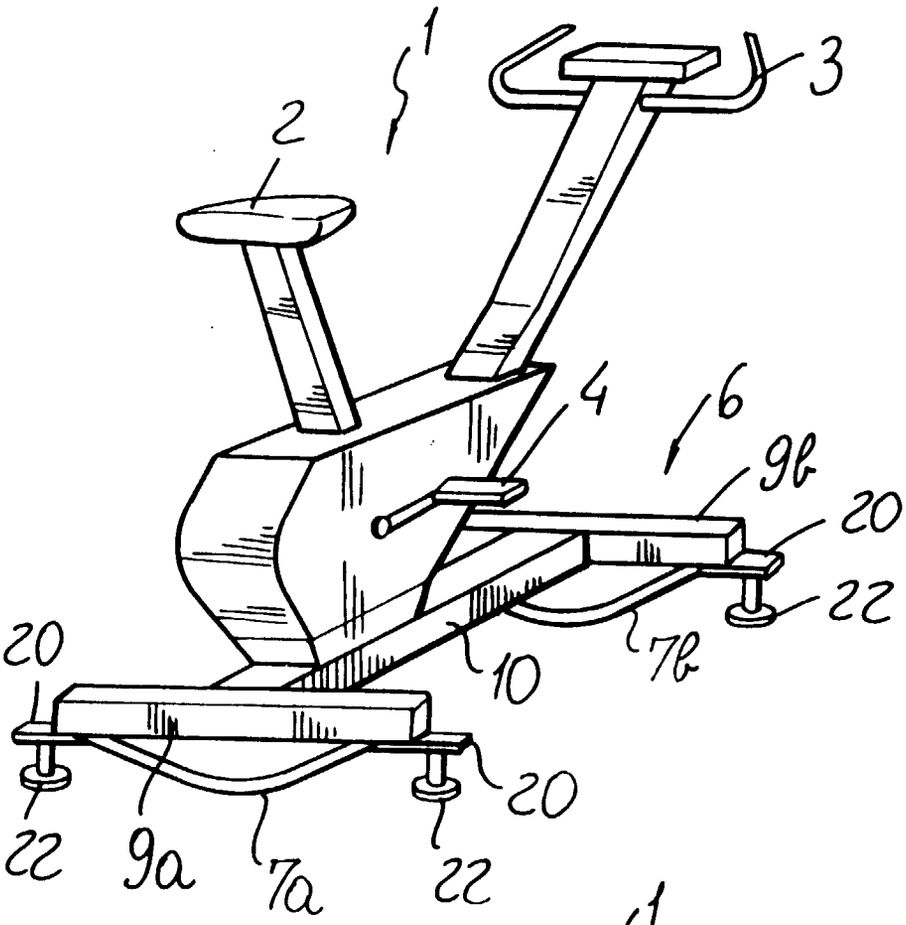


FIG. 5

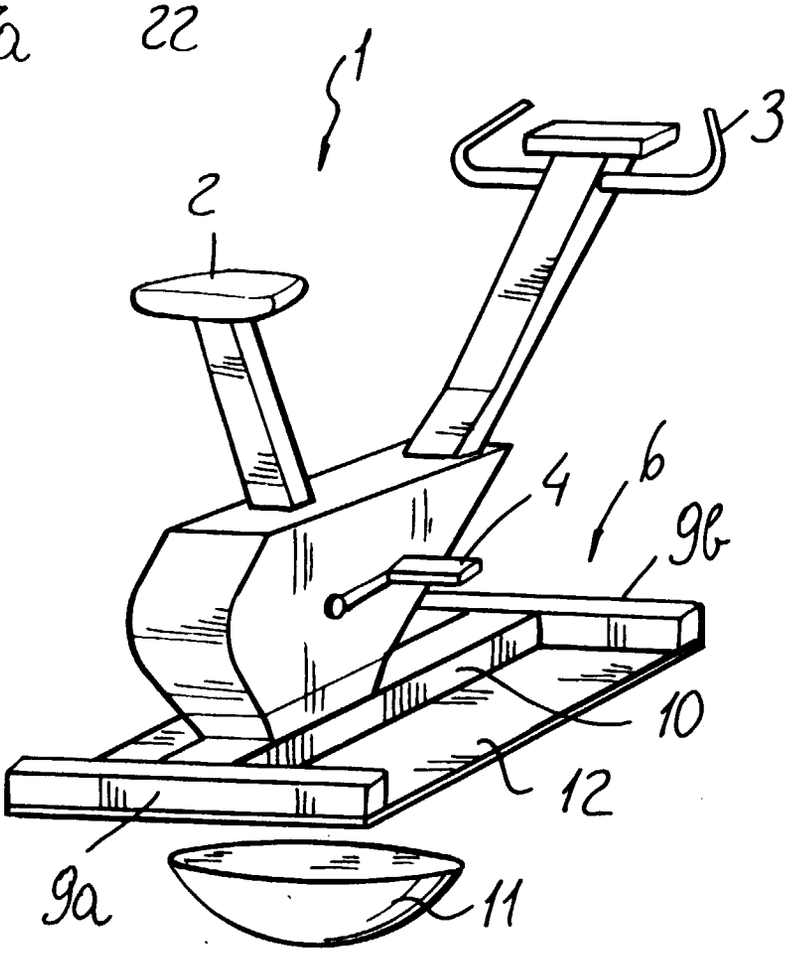


FIG. 6

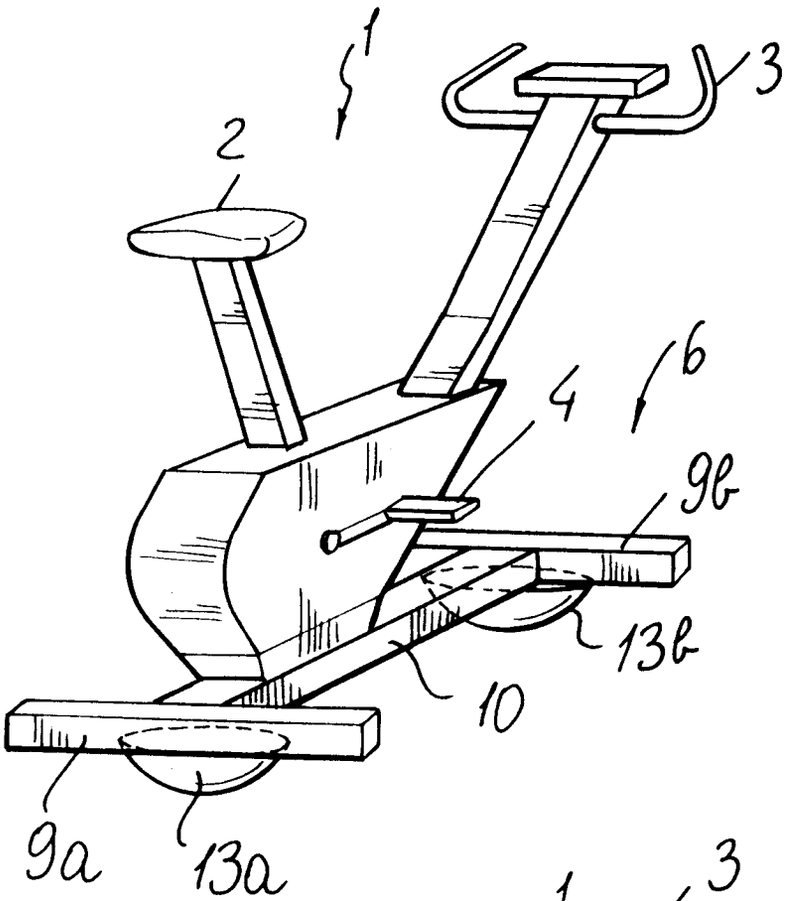


FIG. 7

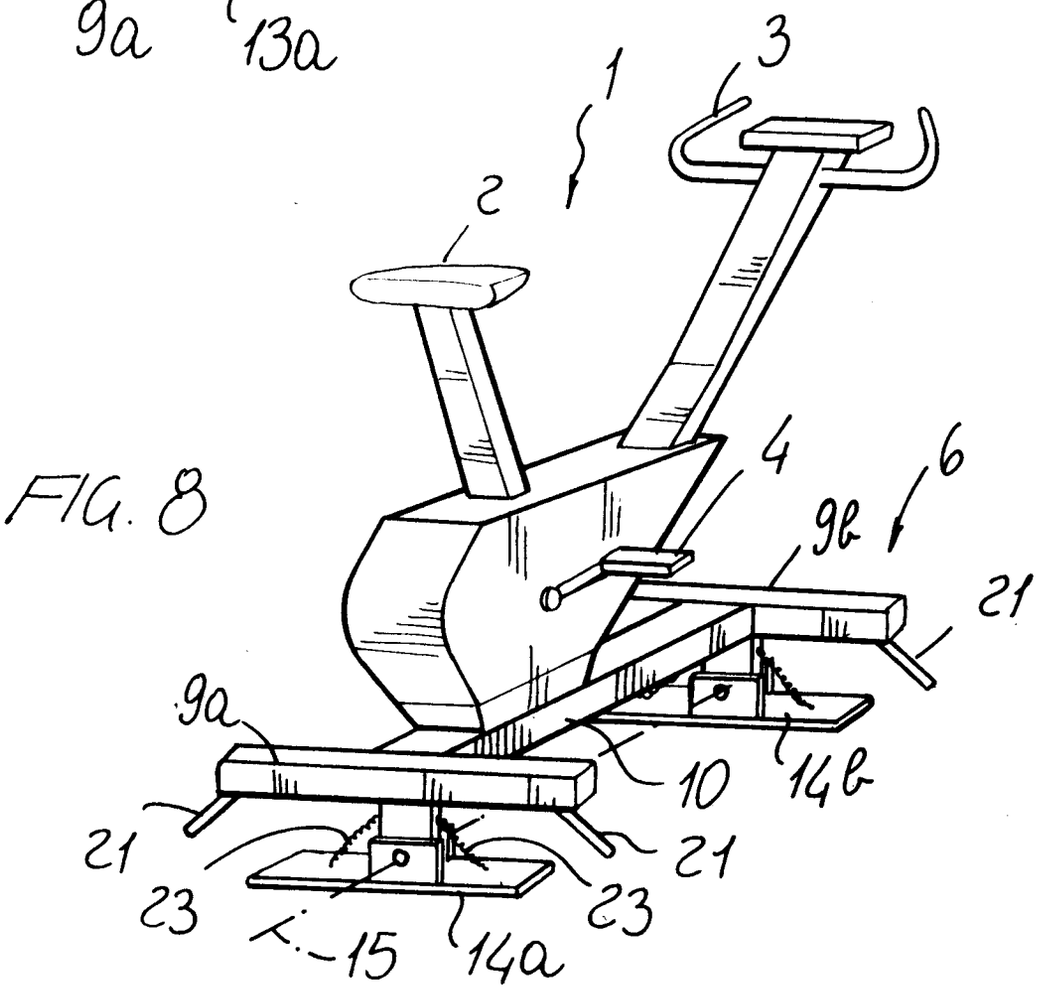


FIG. 8

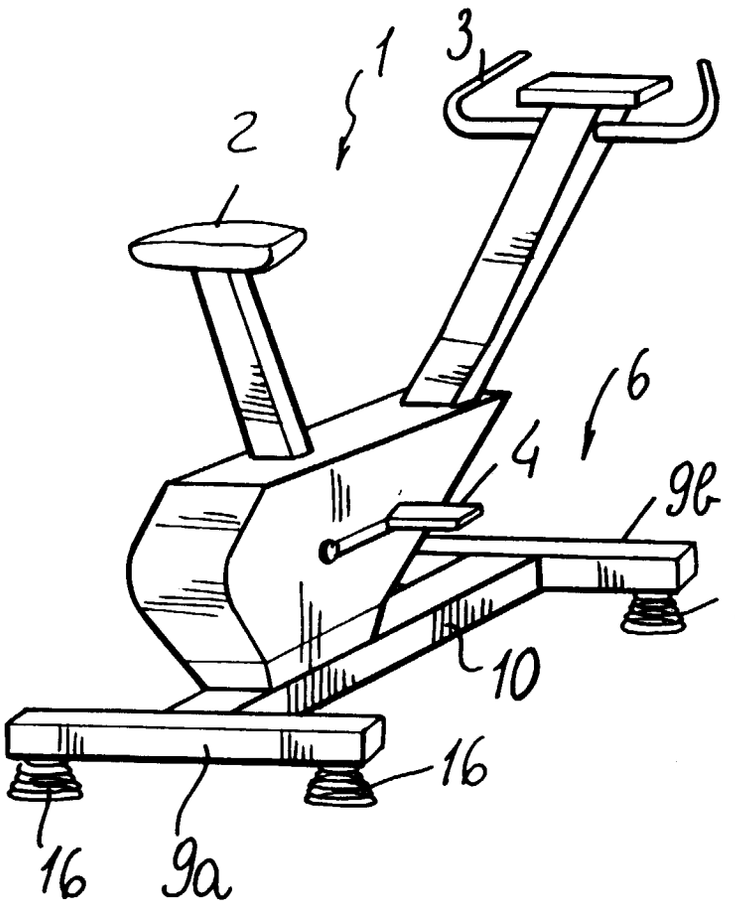


FIG. 9

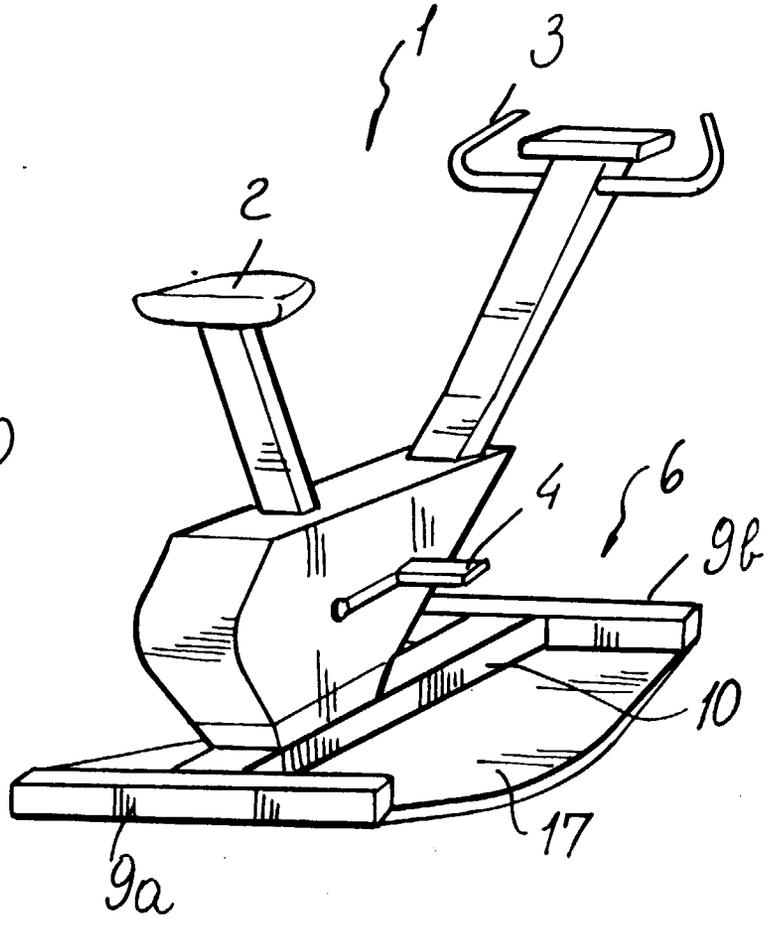


FIG. 10

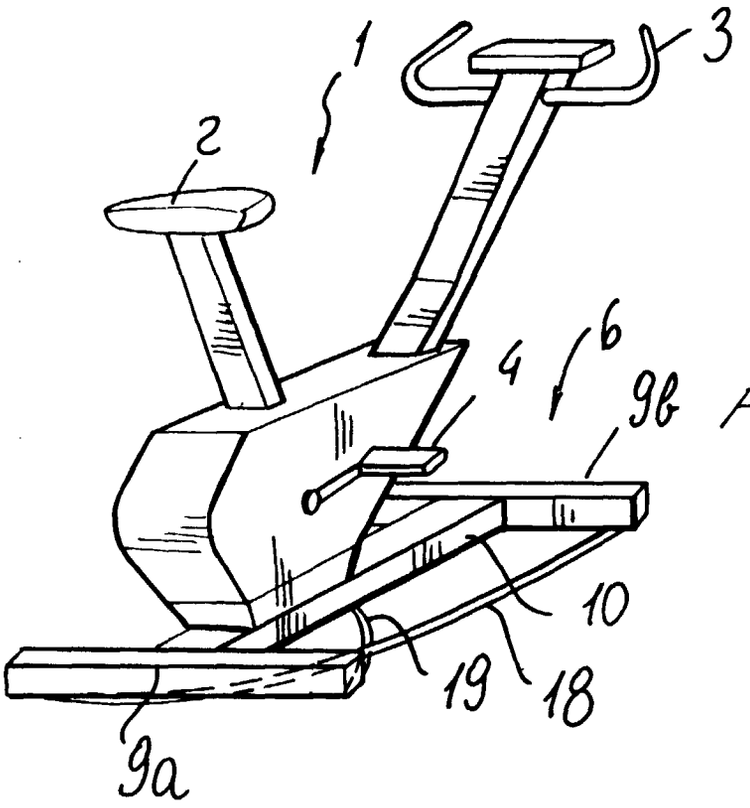


FIG. 11

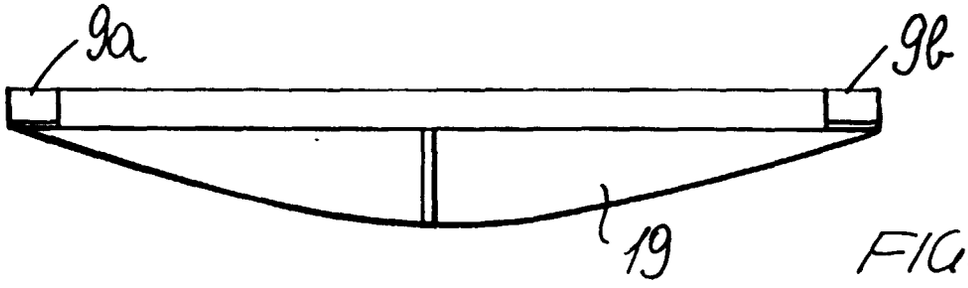


FIG. 12

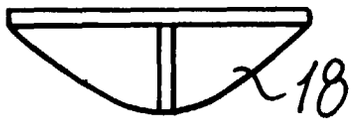


FIG. 13

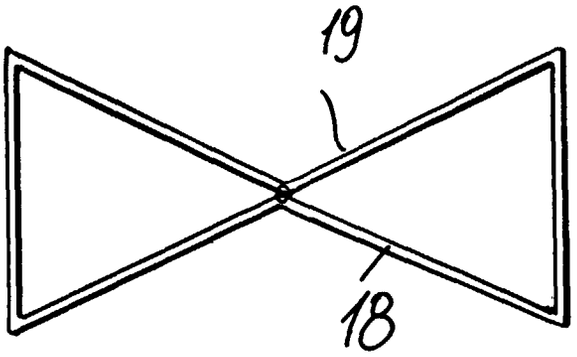


FIG. 14

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 83 0694

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 354 785 A (TOKYO SINTERED METALS CORP) 14 February 1990 * the whole document *	1,9,11, 14-16	A63B22/08
X	US 5 145 477 A (HAN SIHUI) 8 September 1992 * column 3, line 45 - line 68; figures *	1,9,15, 16	
A		2	
X	DE 297 13 828 U (DAUM ELECTRONIC GMBH) 9 October 1997 * page 6, line 21 - page 7, line 3; claims 1-5; figure *	1,9,15, 16	
X	US 4 743 012 A (KIM YONG N) 10 May 1988 * column 1, line 51 - line 65; figures *	1,11	
A		2,3,5	
X	FR 2 602 150 A (MAUGARD MICHEL) 5 February 1988 * page 2, line 1 - line 26; figures *	1,11	
A		2,7	TECHNICAL FIELDS SEARCHED (Int.Cl.6) A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 May 1998	Neumann, E

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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