



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**24.10.2007 Bulletin 2007/43**

(51) Int Cl.:  
**A63B 21/02 (2006.01) A63B 23/04 (2006.01)**  
**A63B 22/16 (2006.01)**

(21) Application number: **06008065.2**

(22) Date of filing: **19.04.2006**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL BA HR MK YU**

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(54) **Treadle assembly of an exercise equipment**

(57) The invention relates to a a treadle assembly of an exercise equipment, including a mounting seat (30), a treadle (10) and a bearing bracket (20). The mounting seat (30) includes a supporting groove (32) in the middle thereof and two indentations (34) in the middle of both sides thereof. The treadle (10) includes a rigid cylinder (12) at the bottom thereof. The inside of the rigid cylinder (12) is filled with soft filling material (14). A screw bolt (16) is fitted in the middle of the soft filling material (14) for securing the mounting seat (30) to the treadle (10) by

fixing the screw bolt (16) in the indentations (34) of the mounting seat (30) in collaboration with screwing elements (18). The bearing bracket (20) is attached to a bottom side of the supporting groove (32) of the mounting seat (30). Meanwhile a bearing (24) is disposed at each of four corners for a full contact with the periphery of the rigid cylinder (12). Thus a plurality of connecting holes (36) are formed at both sides of the mounting seat (30) for securing the mounting seat (30) to a treadle plank (42) of the exercise equipment (40).

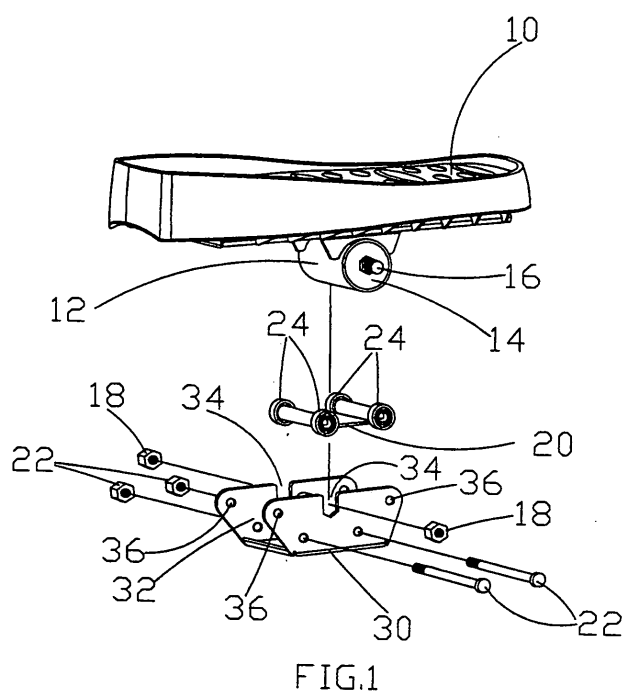


FIG.1

## Description

### BACKGROUND OF THE INVENTION

#### 1. Fields of the Invention

**[0001]** The invention relates to a treadle assembly of an exercise equipment, and more particularly to a treadle assembly that undergoes a proper angle change with the up and down movement of the treadle plank of the exercise equipment in adjustment to the soles of both feet of the operator for protecting his ankle joints from injuries.

#### 2. Description of the Related Art

**[0002]** The soles of the feet of the operators are subject to a certain angle change with the up and down movement of the treadle plank of the exercise equipment when an operator takes exercise on a treadmill or an elliptical cross trainer. For example, the soles of the feet tend to be raised while they rise, and they tend to be downwardly inclined when they sink.

It's never seen that any means for adjusting the change of the treading angle is fitted to the treadle of the conventional exercise equipment. Therefore, the operator has to be forced to adjust himself to the angle change of the treadle. When the operator only uses the exercise equipment for a short time, the aforementioned design may not pose an injury risk to the operator. However, the ankle joints of the long-term operator would be subjected to exercise injuries due to the mechanic compulsory force caused by the unnatural positions for a long time. Most of the operators who did not realize the potential hazard would get unknown injuries in the area of the ankle joints in the future. If it's true, the manufacturers of the exercise equipment must be responsible for it.

### SUMMARY OF THE INVENTION

**[0003]** Therefore, it is a primary object of the invention to provide a treadle assembly of an exercise equipment that protects the ankle joints of the long-term users from potential injuries, thereby achieving more safety in operation.

In order to achieve the above-mentioned object, a soft filling material like rubber with torsional and resilient elasticity is employed for subjecting the treadle to synchronic torsion due to application of force to the treadle, thereby resulting in proper angle change in adjustment of the soles of the operator's feet. Of course, the filling material brings the treadle in original position when the external force is removed. In this way, the ankle joints of the operator can be properly protected from injuries.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0004]** The accomplishment of this and other objects of the invention will become apparent from the following

description and its accompanying drawings of which:

FIG. 1 is a perspective exploded view of the present invention;

FIG. 2 is a schematic drawing of a preferred application of the invention; and

FIG. 3 is a schematic drawing of another preferred application of the invention.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0005]** First of all, referring to FIGS. 1 and 2, the invention includes a mounting seat 30, a treadle 10, a bearing bracket 20,

**[0006]** The mounting seat 30 includes a supporting groove 32 in the middle thereof and two indentations 34 in the middle of both sides thereof.

**[0007]** The treadle 10 includes a rigid cylinder 12 at the bottom thereof. The inside of the rigid cylinder 12 is filled with soft filling material 14. A screw bolt 16 is fitted in the middle of the soft filling material 14 for securing the mounting seat 30 to the treadle 10 by fixing the screw bolt 16 in the indentations 34 of the mounting seat 30 in collaboration with screwing elements 18.

**[0008]** The bearing bracket 20 is attached to a bottom side of the supporting groove 32 of the mounting seat 30. Meanwhile, a bearing 24 is disposed at each of four corners for a full contact with the periphery of the rigid cylinder 12.

**[0009]** In addition, a plurality of connecting holes 36 are formed at both sides of the mounting seat 30 for securing the mounting seat 30 to a treadle plank 42 of an exercise equipment 40.

**[0010]** Based on the assembly of the above-mentioned components, as shown in FIG. 2, the treadle 10 undergoes a proper angle change with the up and down movement of the treadle plank 42 of the exercise equipment 40 in adjustment to the soles of both feet of the operator for protecting his ankle joints from injuries.

**[0011]** As shown in FIG. 3, the mounting seat 30 may be directly screwed or welded to the surface of the treadle plank 42 for achieving the same safety effect in operation.

**[0012]** Many changes and modifications in the above-described embodiment of the invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and is intended to be limited only by the scope of the appended claims.

### Claims

1. A treadle assembly of an exercise equipment, comprising:

a) a mounting seat (30) having a supporting groove (32) in the middle thereof and two inden-

tations (34) in the middle of both sides thereof;  
b) a treadle (10) having a rigid cylinder (12) at  
the bottom thereof, the inside of the rigid cylinder  
(12) being filled with soft filling material (14), a  
screw bolt (16) being fitted in the middle of the  
soft filling material (14) for securing the mounting  
seat (30) to the treadle (10) by fixing the screw  
bolt (16) in the indentations (34) of the mounting  
seat (30) in collaboration with screwing ele-  
ments (18); and  
c) a bearing bracket (20) attached to a bottom  
side of the supporting groove (32) of the mount-  
ing seat (30), a bearing (24) being disposed at  
each of four corners for a full contact with the  
periphery of the rigid cylinder (12),

whereby a plurality of connecting holes (36) are  
formed at both sides of the mounting seat (30) for  
securing the mounting seat (30) to a treadle plank  
(42) of the exercise equipment (40).

2. The treadle assembly of an exercise equipment (40)  
of claim 1, wherein the mounting seat (30) is directly  
fixed on the surface of the treadle plank (42).

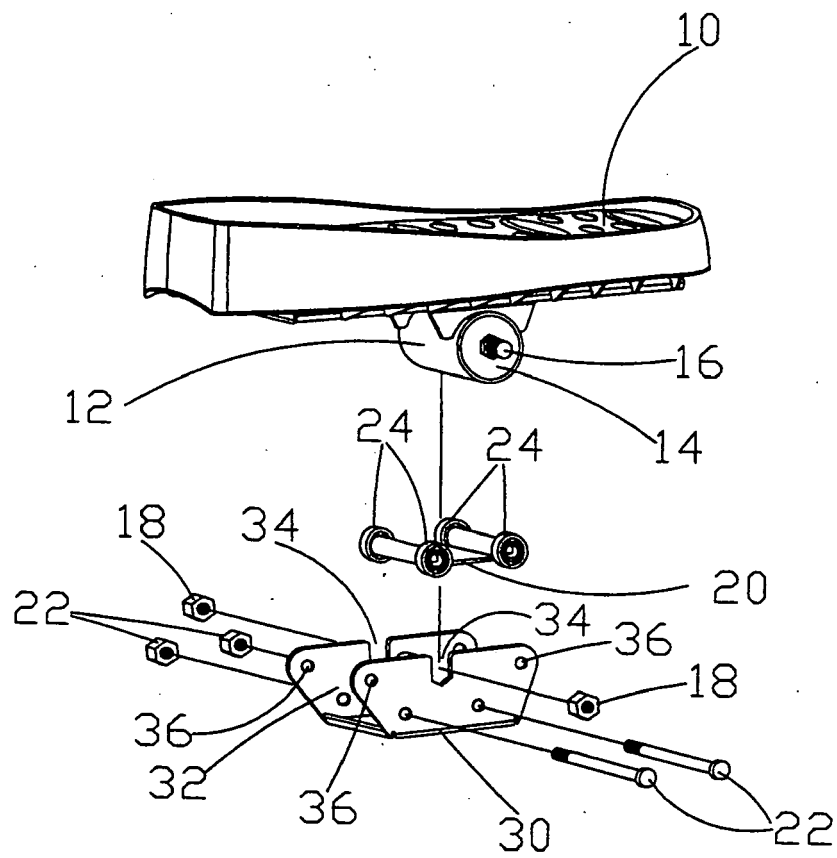


FIG.1

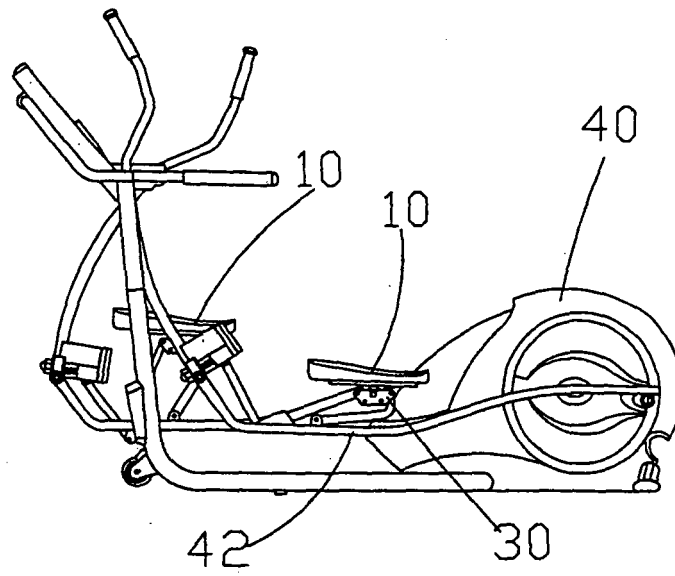


FIG. 2

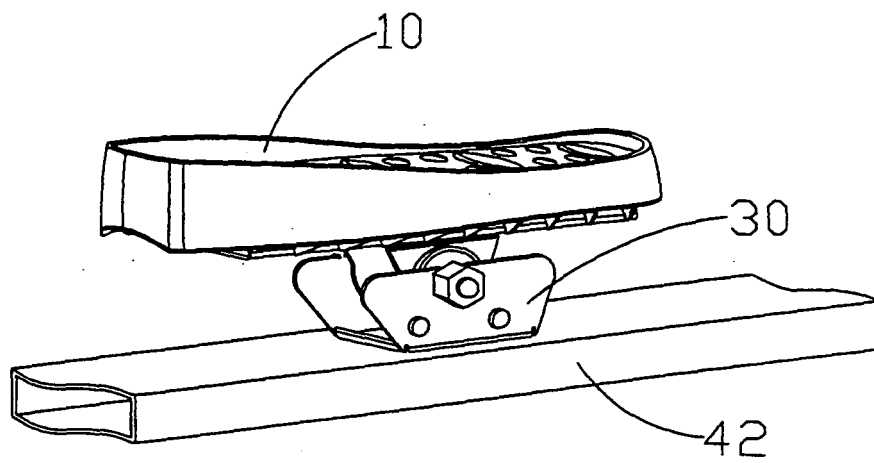


FIG. 3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 06 00 8065

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                       |                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                                                                           | Relevant to claim                                                                                                                                                                                                                                                                     | CLASSIFICATION OF THE APPLICATION (IPC)     |
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| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                       |                                             |
| Place of search<br>The Hague                                                                                                                                                                                                                           |                                                                                                                                                                                         | Date of completion of the search<br>15 September 2006                                                                                                                                                                                                                                 | Examiner<br>Oelschläger, Holger             |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                                                                                         | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |                                             |

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EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 06 00 8065

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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15-09-2006

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