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(54) **Deflectable treadle of an exercise apparatus**

(57) A deflectable treadle of an exercise apparatus including at least one flexible connecting element (20) for attaching the treadle (12) to a treadle plank (14) of the exercise apparatus. Based on this configuration, a

swinging and reciprocating motion can be imparted to the treadle according to the force applied by the operator. Meanwhile, the ankle joints of the operator may be sufficiently protected from injuries by use of the flexible connecting elements.

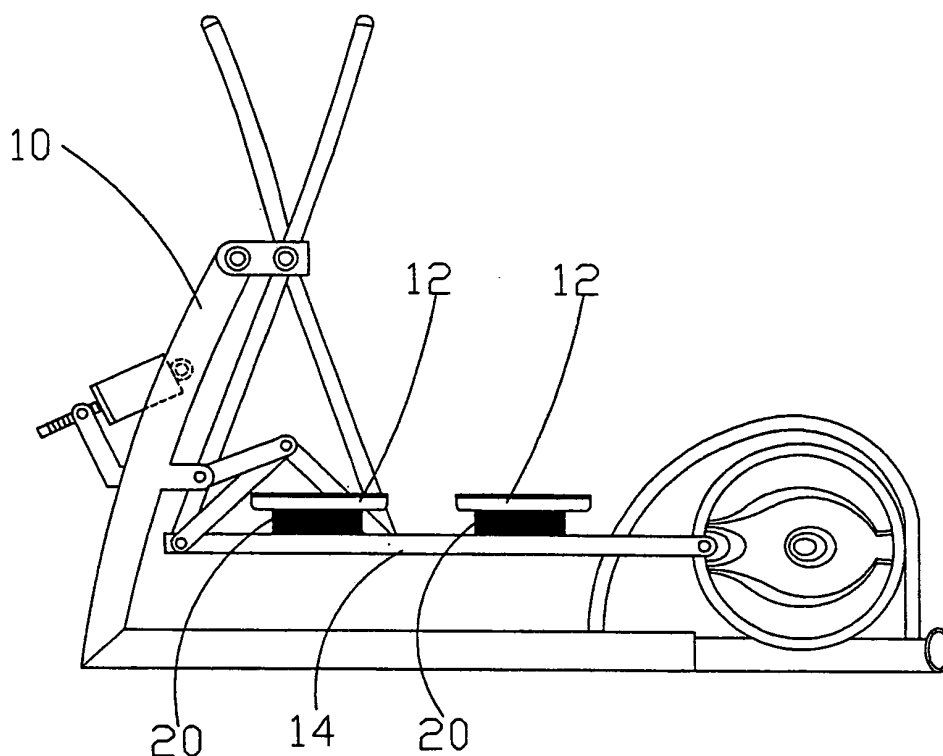


FIG. 1

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.

[0003] 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 do not realized 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

[0004] 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.

[0005] By use of flexible material like rubber with ductility, compressibility und resilience, the treadle can be simultaneously deformed according to the applied force. Therefore, the treadle can adjust to the change of sole's angle during the whole exercise session. When the external force is removed, the treadle can be restored to its original position by use of a flexible connecting element. In this way, the ankle joints of the operator can be sufficiently protected from injuries.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

FIG. 1 is a schematic drawing of a preferred embodiment of the present invention;

FIG. 2 is a partial sectional view of another preferred embodiment of the present invention; and

FIG. 3 is a schematic drawing of a further preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0007] The accomplishment of this and other objects of the invention will become apparent from the following description and its accompanying drawings of which:

[0008] Referring to FIG. 1, a preferred embodiment in accordance with the invention is applied to an elliptical cross trainer 10. It's apparent from FIG. 1 that a flexible connecting element 20 is employed to connect a treadle 12 to a treadle plank 14 of an elliptical cross trainer 10. In this way, a swinging and reciprocating motion can be imparted to the treadle 12 according to the force applied by the operator. Meanwhile, the ankle joints can be sufficiently protected from injuries by use of the flexible connecting element 20.

[0009] Referring to FIGS. 2 and 3, other preferred embodiments of the invention are shown. According to FIGS. 2 and 3, two or more flexible connecting elements 20 are employed to connect the treadle 12 to the treadle plank 14 of a respective exercise apparatus (not shown) for achieving the same expected effect. Meanwhile, the use of fixing elements 30 permits a tight attachment of the flexible connecting element 20 to the treadle 12 and the treadle plank 14.

[0010] 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 deflectable treadle of an exercise apparatus, comprising at least one flexible connecting element (20) for attaching the treadle (12) to a treadle plank (14) of the exercise apparatus.
2. A deflectable treadle according to claim 1 with two or more flexible connecting elements (20) being employed to connect the treadle (12) to the treadle plank (14).
3. A deflectable treadle according to claim 1 or 2 with fixing elements (30) permitting a tight attachment of the flexible connecting element (20) to the treadle (12) and the treadle plank (14).

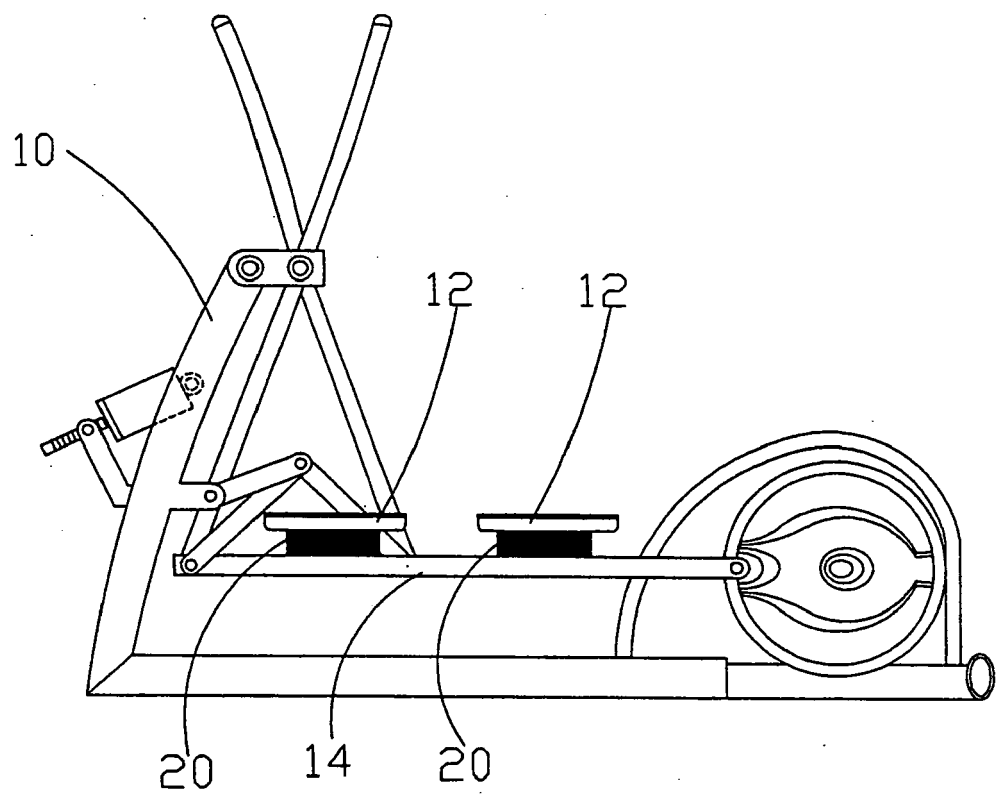


FIG.1

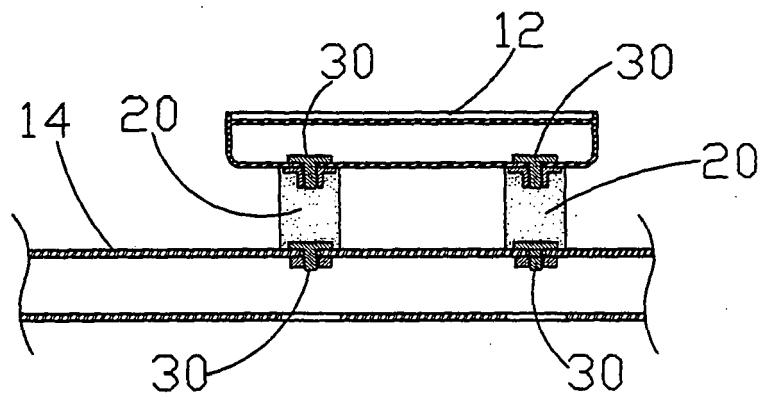


FIG. 2

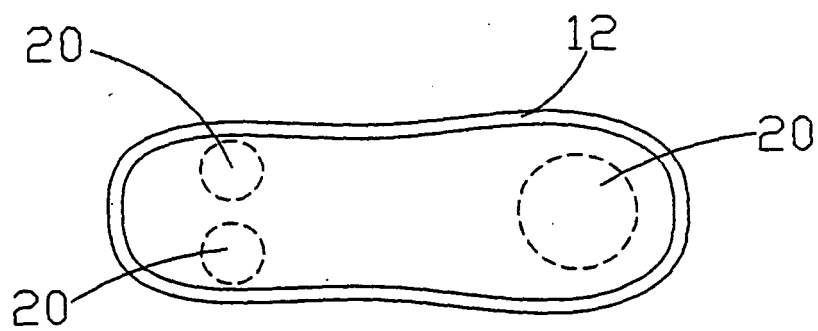


FIG. 3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 00 8064

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			TECHNICAL FIELDS SEARCHED (IPC)
			A63B B62M
Place of search		Date of completion of the search	Examiner
The Hague		14 September 2006	Oelschläger, Holger
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 00 8064

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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14-09-2006

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