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(71) Applicant: **Pitk Pelotas, S.L.**

31110 Noain (ES)

(72) Inventor: **RUIZ ESQUIROZ, Miguel**

31110 Noain (ES)

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(54) **EXERCISE APPARATUS**

(57) An exercise apparatus with a sliding carriage linked to several springs and a foot-support bar (1) that includes the means for angular adjustment and immobilisation which are made up of a fixed shaft (9) placed on each of the sides of the main frame of the apparatus. The arms (2) of the support bar include an elongated opening (8) into which the shaft (9) fits and are moved into a locked

position by means of a spring (11) that connects each arm (2) with its corresponding shaft (9), providing on the side of the frame (3) a part (4) with an arched groove (5), from which a series of slots (6) extend radially, into which the pin (7) at the ends of the side arms (2) of the bar (1) can be selectively inserted.

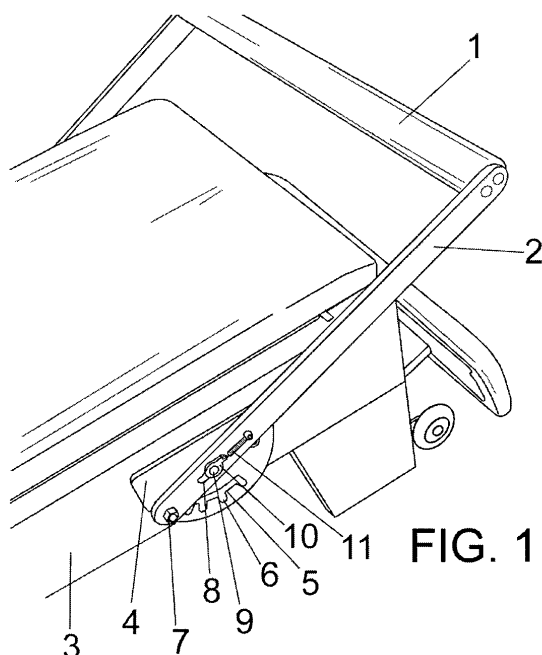


FIG. 1

Description

PURPOSE OF THE INVENTION

[0001] This invention relates to an exercise apparatus with a carriage that slides forwards and backwards, on which the user must position themselves, as well as a support structure for the feet created from a padded bar which is completed with two side arms creating a U-shaped structure. It also has springs to increase or decrease the tension of the sliding carriage, thus providing greater or lesser resistance against that movement.

[0002] The purpose of the invention is to provide the optimum mechanism for both the angular adjustment of the foot-support bar and the adjustment of the tension of the springs linked to that sliding seat.

BACKGROUND OF THE INVENTION

[0003] Exercise apparatus with a rectangular chassis and support feet, on which a seat placed on a carriage can slide against the tension of a set of springs, are known. However, this apparatus also has a device that allows for the assembly of a frame aligned with the front part or head of the chassis, while the opposite end includes a U-shaped bar for foot support, the angle of which can be adjusted.

[0004] Utility model ES 1077615 U describes an apparatus of this type, but with the problem that two hands are required to change the angular position of the foot support bar requiring the user to access a lower part of the mechanism, which entails not only an effort for the user, but also inconvenience.

DESCRIPTION OF THE INVENTION

[0005] The aforementioned exercise apparatus, which is of the same type as the ones mentioned in the previous section, has a first essential novel feature, which is that the position of the U-shape foot-support bar can be adjusted in a comfortable, easy and simple way with just one hand.

[0006] To do so, the ends of this bar have an oblong slot where the rotation shaft of said bar sits, with each rotation shaft being linked to a spring which is attached on one end to the shaft, and on the other to the lateral arm of the foot-support bar. To achieve the locking and corresponding angular fastening of the aforementioned foot-support bar, there is a pin near the lower or free end of the bar's arms that can be inserted as selected in a set of radial slots provided for this purpose in an arched groove established in a part secured to the side of the chassis. In this way, to unlock the position of said pin from its corresponding notch or groove, the bar must be pulled against the tension of the spring that links it to the fixed shaft, to position said locking pin in the arc or arched groove from which the aforementioned locking slots extend radially, thus allowing the pin to move to the desired

angular position, so that once the user stops applying tension to the spring, the pin will lock into the desired position, thus leaving the bar perfectly stable and locked.

[0007] As well as being able to carry out this procedure with one hand, it does not require bending down as much as with other existing systems, thus representing an easier, more comfortable and faster manoeuvre.

[0008] In line with another of the features of the invention, the adjustment of the position of the springs connected to the seat's sliding carriage is achieved through a carriage that has two axial pins that can be operated with one hand, pulled into the locking position by a spring, said pins being interlocked as selected in a series of holes created for that purpose on the inner side of the profiles provided on the sides of the chassis of the exercise apparatus, said operation taking place in a simpler way and with less effort than in the conventionally used apparatus.

[0009] Therefore, based on the mentioned novel features, a more comfortable and easier to use exercise apparatus is obtained.

DESCRIPTION OF THE DRAWINGS

[0010] To supplement the following description and in order to help towards a better understanding of the invention's features, in accordance with a preferential example of its practical realisation, a set of drawings are provided as an integral part of said description, by way of illustration and not limitation:

Figure 1. Shows a perspective view of an exercise apparatus created in accordance with the purpose of this invention at the level of the foot-support bar and its angular adjustment mechanism, with the bar appearing in the stable locked position.

Figure 2. Shows a close-up of the mechanism in the previous figure, in its unlocked position, where the bar can slide angularly and selectively, this being possible using just one hand.

Figure 3. Shows an upper perspective view of the parts involved in adjusting the springs associated with the sliding carriage of the seat of the exercise apparatus. These parts, as can be seen in the figure, can be operated with just one hand.

Figure 4. Shows a lower perspective view of the mechanism in the previous figure.

PREFERENTIAL EMBODIMENT OF THE INVENTION

[0011] In light of the aforementioned figures, and especially figures 1 and 2, it can be seen that the exercise apparatus of the invention includes, as is conventional, a U-shaped foot bar (1) which has a central padded cross-piece and two side arms (2), with the peculiarity that the machine includes a system for regulating the angular po-

sition of said bar, for which purpose, the sides of the chassis (3) of the exercise apparatus include a part (4) that is secured to the chassis, having an arched groove (5) which contains a series of radial slots (6), into which a pin can selectively be inserted (7) and completed with the ends of the side arms (2), said arms (2) having an elongated opening (8) which holds the shaft (9) that is linked to the frame or chassis (3).

[0012] Thus, the pin (7) is designed to be selectively housed in one of the notches or slots (6) in a stable manner, and therefore providing the locking of the bar (1) in a stable way, or positioned in line with the arched groove (5) to be able to change the angular position of that bar (1).

[0013] For this, the shaft (9) held in the elongated opening (8) is linked to a part (10) between which and the side arm (2) there is a spring (11) that maintains the locking position for the bar (1).

[0014] As a result, to release the bar (1) it has to be pulled backwards, against the tension of the spring, until the shaft (9) comes up against the lower end of the elongated opening (8), a position in which the pin (7) lines up with the arched groove (5) making it possible to move along the arc and allowing the angular positioning of the bar (1) so that when the pressure against the spring (11) ceases, the pin (7) will tend to go into its locking position in the slot (6) it was facing, thus immobilising the mechanism.

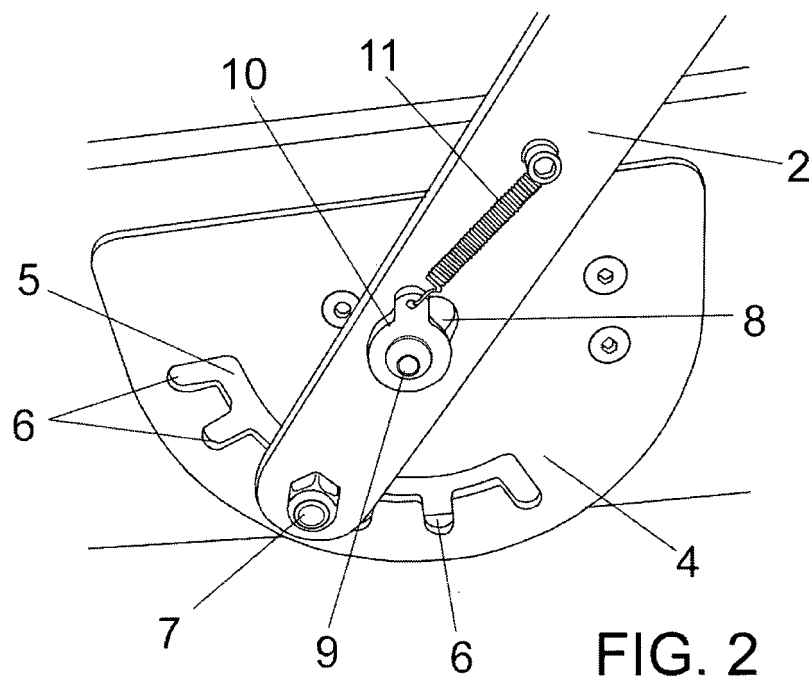
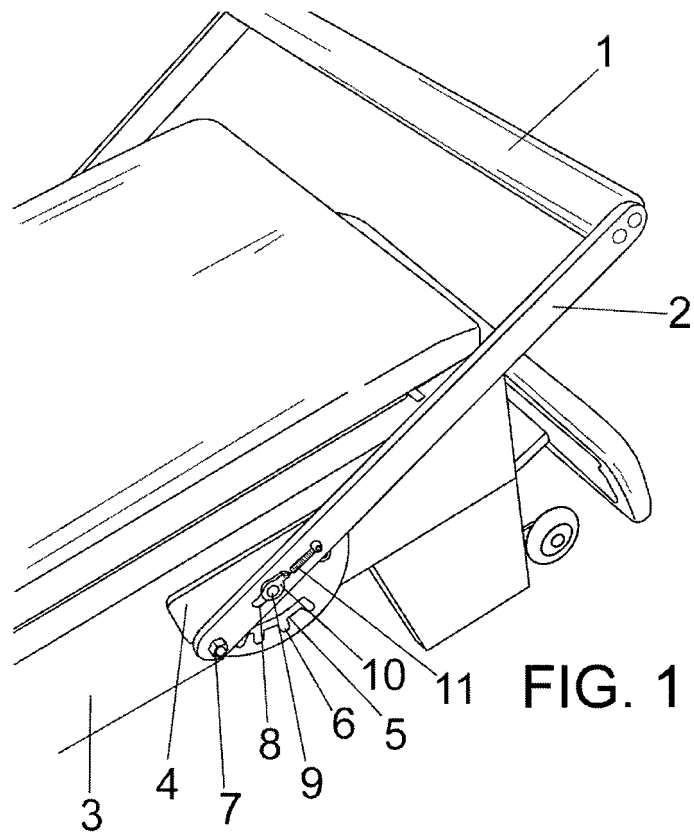
[0015] In accordance with figures 3 and 4, the exercise apparatus has a sliding carriage that is linked to a series of springs (12), whose tension can be varied, a result being that said springs (12) are secured at one of their ends to the pivots (13) of a cross-part (14), which includes a pair of manually-operated heads (15) which can slide along their respective grooves (16), so that said heads (15) are linked to their respective locks (17) which can be moved axially to the frame (20) of the machine against the tension of the respective springs (18) selectively inserted into a series of holes (19) on the frame for this purpose (20), thus allowing the cross-part (14) to move forwards or backwards along the guides (21) and thus vary the relative position of the seat carriage associated with the springs to which it is linked.

having an elongated opening (8) which holds the shaft (9), said arms (2) being pulled to a locked position using a spring (11) that links each arm (2) to its corresponding shaft (9), with the particular feature that on the side of the chassis (3) there is a part (4) that has an arched groove (5) from which a series of slots emerge radially (6), where the pin (7) at the end of the lateral arms (2) of the foot support bar (1) can be selectively inserted.

2. Exercise apparatus, as per claim 1, **characterised by** the means for adjusting the tension of the springs (12), linked to the sliding carriage, being comprised of a pair of manually-activated heads (15) that emerge from the top through various grooves (16) created for this purpose in a cross-part that can slide forwards or backwards with respect to the frame (20) of the exercise apparatus by way of guides (21), said heads (15) being linked to their corresponding locks (17), which can move axially to the frame (20) against the tension of their respective springs (18), which can be selectively inserted into a series of holes (19) established on the inside of the frame (20).

Claims

1. Exercise apparatus of the type comprising a chassis that has a sliding carriage linked to several tension springs, which can be fixed to a cross-part whose position can be adjusted in relation to the main chassis of the device; apparatus that has a U-shaped foot support bar and a mechanism for its angular adjustment and immobilisation, **characterised by** the means for the angular adjustment and immobilisation of the foot support bar (1) being comprised by a fixed shaft (9) located on each side of the main chassis of the apparatus, the arms (2) of the support bar



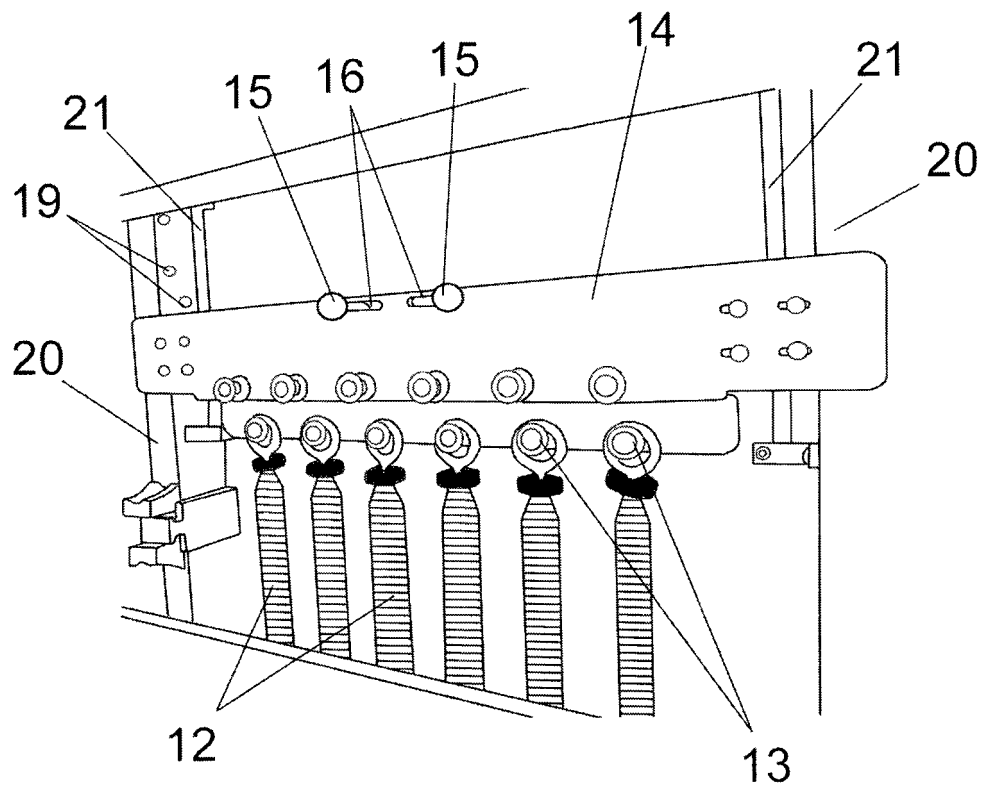


FIG. 3

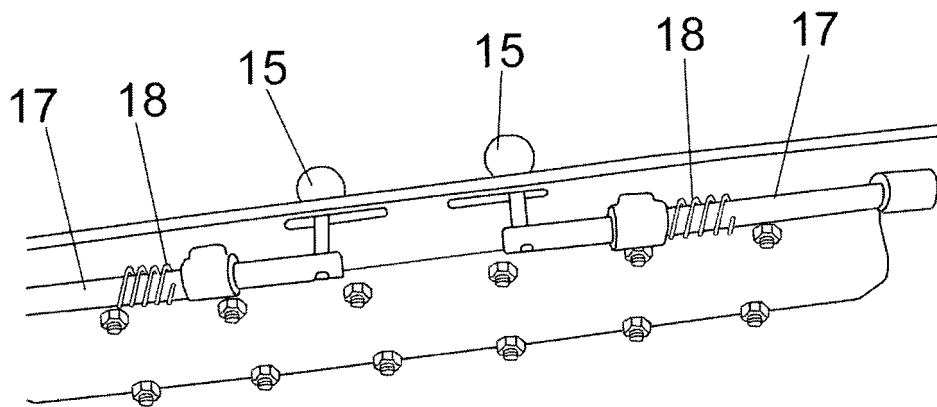


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"&" document member of the same patent family

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Name and mailing address of the ISA/

Authorized officer
Á. Del Portillo Pastor

OFICINA ESPAÑOLA DE PATENTES Y MARCAS
Paseo de la Castellana, 75 - 28071 Madrid (España)
Facsimile No.: 91 349 53 04

Telephone No. 91 3498544

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INTERNATIONAL SEARCH REPORT

International application No.

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CLASSIFICATION OF SUBJECT MATTER

A63B21/02 (2006.01)
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A63B22/00 (2006.01)

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International application No.

PCT/ES2019/070331

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REFERENCES CITED IN THE DESCRIPTION

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