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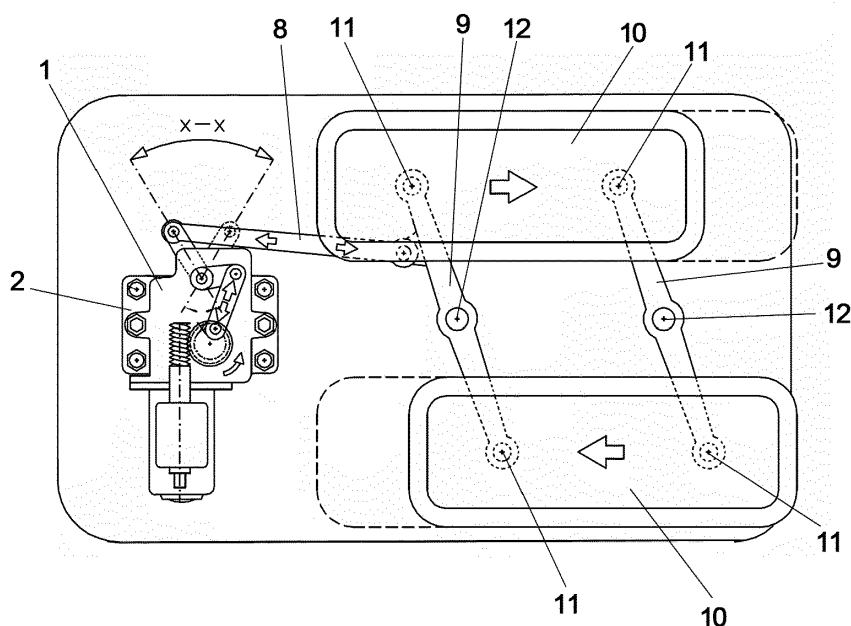
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(54) **APPARATUS FOR EXERCISING THE LOWER LIMBS OF THE HUMAN BODY**

(57) The invention relates to an apparatus for exercising the lower limbs of the human body which, from a motor unit and by means of rods, transmits a reciprocating movement to a pair of supports on which rest the feet of a user. The motor unit is housed in a greased closed compartment seated on a rubber seat plate secured to the base of the apparatus. The drive shaft is a worm that meshes with a gear wheel joined eccentrically to a set of

rods that is secured to one of the two arms (9) of the apparatus so as to rotate about a stationary central shaft (12), and which are secured by securing shafts (11), located at the ends, to respective supports (10). Both the central shaft (12) and the securing shafts (11) of each arm (9) have hubs with radial bearings and are seated on respective axial bearings.



**FIG.1**

## Description

### OBJECT OF THE INVENTION

[0001] The present invention, as expressed in the title of the present specification, relates to an apparatus for exercising the lower limbs of the human body, with the object of reactivating and improving blood circulation, improving the cardiovascular system and, in general, the health of the user.

[0002] The apparatus is especially applicable for elderly people and sick people who have impaired motor capacity in their lower limbs, as well as people who are confined to beds, since the apparatus can be adapted to a chair or hospital bed.

### TECHNICAL PROBLEM TO BE RESOLVED AND BACKGROUND OF THE INVENTION

[0003] As is known, physical exercise is fundamental for maintaining a good state of health, such that although certain work activities entail the necessary practice of physical exercise, there are still more and more people who must stay seated at their workplace, during practically the entirety of the workday, performing a job that is exclusively intellectual, with practically no physical exercise, especially in their lower limbs.

[0004] This lack of physical exercise negatively affects the health of the person over time, producing situations of discomfort, tiredness, back, neck, leg pain, etc.

[0005] These situations can be resolved by performing physical exercise outside of the work day, such that certain people dedicate time every day, as is advisable, to walking, running, practising certain sports which require daily training or going to the gym, while other people perform physical exercise, basically, on free days when they have more free time and, finally, many people, due to a lack of time or motivation, do not perform any physical exercise.

[0006] Furthermore, we can indicate that, with the practice of the simple exercise of walking being one of the most recommended, those that practice it are very few. Alternatively, many people regularly attend a gym in order to perform very intense exercise by means of the use of different specific apparatuses focused on strengthening the body and the limbs, both upper and lower.

[0007] In any case, during the work day, the lack of specific means which enable the use thereof, not to improve, but rather to maintain the physical state, are focused on passive means, such as static footrests on which the feet are allowed to rest in order to adopt a more comfortable and correct position. One element existing in the market, although not very common, consists of dynamic footrests, which enable the feet to rest and transmit a movement to them.

[0008] Thus, we can cite patent document ES2178590, of the same holder as the present invention,

which describes a footrest for exercising the legs while a user is in a seated position and which is essentially based on a pair of supports for the feet to rest on and to which a reciprocating movement is transmitted. This invention, however, due to the configuration and structure thereof, although very useful, produces certain noises and vibrations which are very annoying for the user and their surroundings. Even more so, when the user is at the workplace, which makes the use thereof not very suitable.

### DESCRIPTION OF THE INVENTION

[0009] With the aim of reaching the objectives and preventing the aforementioned drawbacks, the present invention describes an apparatus for exercising the lower limbs of the human body which, from a motor unit, transmits a reciprocating movement to a pair of supports on which rest the feet of a user. The apparatus comprises a greased closed compartment which houses the motor unit, seated on a rubber seat plate secured to the base of the apparatus, the drive shaft of which is defined by a worm that meshes with a gear wheel. In turn, the gear wheel is joined eccentrically to one end of a first rod which, on the other end is joined, so as to rotate, at one end of a second rod. In turn, on the other end, it is securely joined to one end of a third rod which, on the other end, is joined to one end of a fourth rod which, on the other end is secured to one of the arms of a pair which, so as to rotate about a central shaft, are secured by securing shafts, located at the ends, to respective supports on which rest the feet of the user.

[0010] Each of the arms has a first hub which houses the central shaft with the interposition of a pair of first radial bearings and which is seated on a first axial bearing which is, in turn, seated on a first radial projection located in the vicinity of one end of the central shaft. This end of the central shaft is extended with a threaded segment which crosses through a seat and is secured by means of a nut, the seat being secured to the base of the apparatus.

[0011] In the same manner, each end of each arm has a second hub which houses a securing shaft with the interposition of a second radial bearing and which is seated on a second axial bearing which is seated on the upper base of a second radial projection of the securing shaft. This second radial projection, by the lower base thereof, is seated on the very arm, while the securing shaft is extended, crossing through the arm, in a threaded segment which is secured by means of a nut.

[0012] The second hubs of the pair of arms and the first hubs of the pair of supports have an internal setback whereon respective retaining washers are seated together with elastic rings, securing the securing shafts and the central shafts.

[0013] The supports on which rest the feet of the user have a perimeter projection whereon an accessory element can be coupled configured with a general layout

similar to that of the support and provided with an L-shaped projection on the perimeter defining a female mortise for fitting the perimeter protrusion of the supports. In the external base thereof and in the vicinity of one of the smaller sides, it is equipped with a curved protrusion on which rest the feet of the user. On both larger sides it has a pair of slitted orthogonal projections facing each other in pairs for the incorporation of a strip of Velcro® therethrough for the grip of the feet of the user.

**[0014]** The apparatus, in the external resting base thereof can have a first pair of secured blocks and a second pair of adjustable blocks, such that, if the user uses footwear with heels, they are in a more comfortable position.

### BRIEF DESCRIPTION OF THE FIGURES

**[0015]** To complete the description of the invention, and for the purpose of helping to make the characteristics thereof more readily understandable, according to a preferred exemplary embodiment thereof, a set of drawings is included where, by way of illustration and not limitation, the following figures have been represented:

- Figure 1 shows a plan view of the apparatus for exercising of the invention wherein the upper cover has been removed in order to display the elements that comprise it.
- Figure 2 shows a view of the motor unit and the different rods responsible for the transmission of the movement to the supports on which rest the feet of the user.
- Figure 3 shows a side view of the apparatus for exercising wherein the side cover has been removed in order to display the elements that comprise it.
- Figure 4 shows an enlarged view of the mechanism marked in Figure 3.
- Figure 5 shows a plan view of an accessory element for placement on each of the resting supports in order to place the feet of a user.
- Figure 6 shows a side view of the apparatus for exercising adapted to an chair.
- Figure 7 shows an enlargement of the apparatus for exercising adapted to the chair shown in Figure 6.
- Figure 8 shows a side view of the apparatus for exercising with an inclination mechanism.

**[0016]** A list of the references used in the figures is provided below:

1. Motor unit.
2. Seat plate
3. Worm.
4. Gear wheel.
5. First rod.
6. Second rod.
7. Third rod.
8. Fourth rod.

9. Arms.
10. Supports.
11. Securing shafts.
12. Central shafts.
13. First hub.
14. First radial bearing.
15. First axial bearing.
16. First radial projection.
17. First elastic ring.
18. First retaining washer.
19. Seat.
20. Base of the apparatus.
21. Second hubs.
22. Second radial bearing.
23. Second axial bearing.
24. Second radial projection.
25. Second elastic ring.
26. Second retaining washer.
27. Protrusion.
28. Accessory element.
29. Projection.
30. Curved protrusion.
31. First flange.
32. Second flange.
33. Skirt.
34. Secured blocks.
35. Adjustable blocks.

### DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

**[0017]** Considering the numbering adopted in the figures and, as shown in Figure 1, the apparatus for exercising of the invention comprises a closed compartment which houses a motor unit (1) the base of which is seated on a seat plate (2) preferably made of rubber, with the object of absorbing the vibrations and noises that it produces when in movement, elements which are annoying both for the user of the apparatus and for the people in their surroundings. The rubber seat plate (2) is secured by means of screws to the base of the motor unit (1) and the base of the apparatus (20).

**[0018]** Thus, as shown in Figure 1 and more clearly in Figure 2, the closed compartment houses the drive shaft of the motor, defined by a worm (3) that meshes with a gear wheel (4). From an eccentric point of the gear wheel (4) four rods (5, 6, 7, 8) are joined consecutively by the ends thereof, as shown in Figure 2. The first rod (5) is articulated to the wheel (4) and to the second rod (6). The second rod (6) is integrally joined to the third rod (7) and both are able to rotate around a secured pin that joins it. Thus, the rotating movement of the wheel (4) is converted into an angular reciprocating movement in the third rod (7). The fourth rod (8) is articulated to the third rod (7) by one of the ends thereof.

**[0019]** The closed compartment incorporates grease immersing the worm drive shaft (3), the gear wheel (4) meshed with it, the first rod (5), the second rod (6) and

the shaft that joins it to the third rod (7), which enables the noise that could be produced to be reduced as much as possible, enables better operations of the motor unit (1) and prevents the accumulation of dirt.

**[0020]** As shown in Figure 3, the apparatus also comprises two parallel supports (10) on which rest the feet of the user which are each joined to the ends of a pair of parallel arms (9) by means of respective securing shafts (11) which are able to rotate. The arms (9) are secured by respective central shafts (12) to the casing of the apparatus, such that they are able to rotate.

**[0021]** As seen in Figure 1, the movement of the supports (10) is performed by means of the joining of the fourth rod (8), by the free end thereof, to one of the arms (9) by an area close to one of the ends thereof.

**[0022]** Thus, when the motor activates the rotation of the worm drive shaft (3), it causes the rotation of the gear wheel (4) and, with it, the movement of the rods (5, 6) which cause the reciprocating rotation, according to the shown angle X-X, of the third rod (7). The angular reciprocating movement of the third rod (7) is converted into an alternating movement of the fourth rod (8) which, through the arms (9), is converted into an alternating movement of the supports (10) which makes it so that, due to the securing of the central shafts (12), while one of the supports (10) moves in one direction, the other support moves in the opposite direction.

**[0023]** The securing of the ends of the arms (9) in the supports (10) produces friction when it moves which is normally accompanied by noise. One of the objects of the present invention is to prevent these noises.

**[0024]** To do so, as shown in Figure 3 and more clearly in the enlargement of Figure 4, the arms (9) incorporate a first hub (13) which houses a pair of first radial bearings (14) which fit into the central shaft (12), passing through the first hub (13). In turn, the first hub (13) is seated on a first axial bearing (15) which is arranged on a first radial projection (16) incorporated by the central shaft (12). This, in turn, rests on a seat (17) which is secured to the internal base (20) of the apparatus by means of screws.

**[0025]** The end of the central shaft (12) which is close to the radial projection (16) is threaded and crosses through the seat (19) in order to be secured by means of a nut which is housed in a gap made in the seat (19) for this purpose.

**[0026]** The central shaft (12) is secured to the arm (9), by the opposite end thereof, by having a first elastic ring (17) and a first retaining washer (18).

**[0027]** Moreover, the joining of the arms (9) to the resting supports (10) is made by means of second hubs (21). Each of the second hubs (21) houses a second radial bearing (22) wherein a securing shaft (11) fits and is seated on a second axial bearing (23) which is arranged on a second radial projection (24) incorporated by the securing shaft (11) with the object of supporting the weight of the legs of the user and reducing the consumption of the motor, as well as reducing noise.

**[0028]** According to Figure 4, it can be seen how the

mentioned securing shafts (11) are coupled to the ends of the pair of arms (9) and are anchored by respective nuts, while on the other end the cited securing shafts (11) incorporate second elastic rings (25) which through second retaining washers (26) are secured to supports (10) on which rest the feet of the user. In this figure it is seen how the retaining washers (26) are seated on a small setback had by the second hubs (21), just like the first hub (13).

**[0029]** As seen in Figure 3, the supports (10) on which rest the feet of the user have in the upper base and on the perimeter a small protrusion (27), such that when the apparatus is going to be adapted to a reclining chair, as seen in Figure 6, or to a hospital bed, an accessory element (28) will be placed which is based on a platform with dimensions similar to the supports (10) and equipped with an L-shaped perimeter projection (29) defining a female mortise which will receive the protrusion (27), as seen in Figure 7, being secured and able to be disassembled.

**[0030]** Likewise, as shown in Figure 5, the cited accessory element (28) has on the external face thereof and in the vicinity of one of the smaller sides a curved protrusion (30) wherein the user, when they are in a lying position, will be able to place their heel to rest the foot and, with a strip with Velcro® or similar, secure the foot of the user, which represents a significant advantage. To do so, the accessory element (28) has on both larger sides, at least, one slitted projection, in an orthogonal position, which, in one preferred embodiment, are present in pairs facing each other through which respective strips of Velcro® will pass with the object of tying down the feet of the user.

**[0031]** The adaptation of the apparatus for exercising to a reclining chair is performed by means of a right-angled structure, such that by a first flange (31) it is secured to the skirt (33) of the reclining chair and by a second flange (32) the apparatus for exercising is assembled, as shown in Figures 6 and 7, it being able to be seen how the right-angled structure has a mechanism which enables the tilting of both flanges (31, 32) between each other in order to adapt it to the needs of the user.

**[0032]** In Figure 7, the apparatus for exercising is seen in detail with the right-angled structure for adaptation to be assembled in a reclining chair or a hospital bed, the motorised tilting mechanism being shown between the conventional flanges (31, 32). Likewise, we can see how the apparatus for exercising has incorporated the accessory element (28) in the supports (10).

**[0033]** Moreover, the resting base of the apparatus for exercising has a pair of secured blocks (34) arranged on the side closest to the user when in use and a pair of adjustable blocks (35) which, for example, can be threaded screws, located on the opposite side farthest from the user such that if the user uses footwear with heels they can adjust the inclination of the apparatus making the use thereof more comfortable. This is shown in Figure 8, wherein the curved protrusion has been removed for

greater clarity. The two adjustable blocks (35) can be based on threaded screws. The secured blocks (34) and the adjustable blocks (35) are preferably antislip.

**[0034]** Placing emphasis on Figure 6, it can be seen how the reclining chair has a tilting back and skirt. The back further incorporates at least on one of the sides, although preferably on both sides, an apparatus for exercising the upper limbs, protected by document ES2499815 of the same holder as the present invention, while in the skirt (33) the apparatus for exercising the lower limbs object of the invention has been adapted to it.

**[0035]** Finally, it must be taken into account that the present invention must not be limited by the embodiment herein described. Other arrangements may be carried out by those skilled in the art based on the present description. Accordingly, the scope of the invention is defined by the following claims.

## Claims

1. An apparatus for exercising the lower limbs of the human body, wherein from a motor unit it transmits a reciprocating movement to a pair of supports on which rest the feet of a user, **characterised in that** the apparatus comprises:

- a greased closed compartment which houses the motor unit (1), seated on a rubber seat plate (2) secured to the base of the apparatus (20), the drive shaft of which is defined by a worm (3) that meshes with a gear wheel (4) which is joined eccentrically by means of a shaft to one end of a first rod (5) which, on the other end is joined, so as to rotate, at one end of a second rod (6) which, in turn, on the other end, is securely joined to one end of a third rod (7) which, on the other end, is joined to one end of a fourth rod (8) which, on the other end is secured to one of the arms (9) of a pair which, so as to rotate about a central shaft (12), are secured by securing shafts (11), located at the ends, to respective supports (10) on which rest the feet of the user;
- each of the arms (9) has a first hub (13) which houses the central shaft (12) with the interposition of a pair of first radial bearings (14) and which is seated on a first axial bearing (15) seated on a first radial projection (16) located in the vicinity of one end of the central shaft (12), end which is extended with a threaded segment which crosses through a seat (19) and is secured by means of a nut, the seat (19) being secured to the base of the apparatus (20);
- each end of each arm (9) has a second hub (21) which houses a securing shaft (11) with the interposition of a second radial bearing (22) and which is seated on a second axial bearing (23) seated on the upper base of a second radial pro-

jection (24) of the securing shaft (11) which, by the lower base thereof, is seated on the very arm (9) and the securing shaft (11) is extended crossing through the arm (9) in a threaded segment and is secured by a nut;

- the second hubs (21) of the pair of arms (9) and the first hubs (13) of the pair of supports (10) have an internal setback whereon respective retaining washers (18, 26) are seated together with elastic rings (17, 25), securing the securing shafts (11) and the central shafts (12);
- the supports (10) on which rest the feet of the user have a perimeter projection (29).

2. The apparatus for exercising the lower limbs of the human body, according to claim 1, **characterised in that** it comprises an accessory element (28) able to be coupled to the perimeter projection (29) of the supports (10) configured with a general layout similar to that of the support (10) and provided with an L-shaped projection (29) on the perimeter defining a female mortise for fitting the perimeter protrusion (27) of the supports (10), while, in the external base thereof, it is equipped with a curved protrusion (30) in the vicinity of one of the smaller sides and on both larger sides it has a pair of slitted orthogonal projections facing each other in pairs.
3. The apparatus for exercising the lower limbs of the human body, according to claim 1, **characterised in that** the apparatus, in the external resting base thereof, has a pair of secured blocks (34) and a second pair of adjustable blocks (35).
4. The apparatus for exercising the lower limbs of the human body, according to claim 1 or 2, **characterised in that** it has a strip of mechanical adhesive with hooks and loops passing through the slits of the orthogonal projections facing each other on both sides of the accessory element. (28).

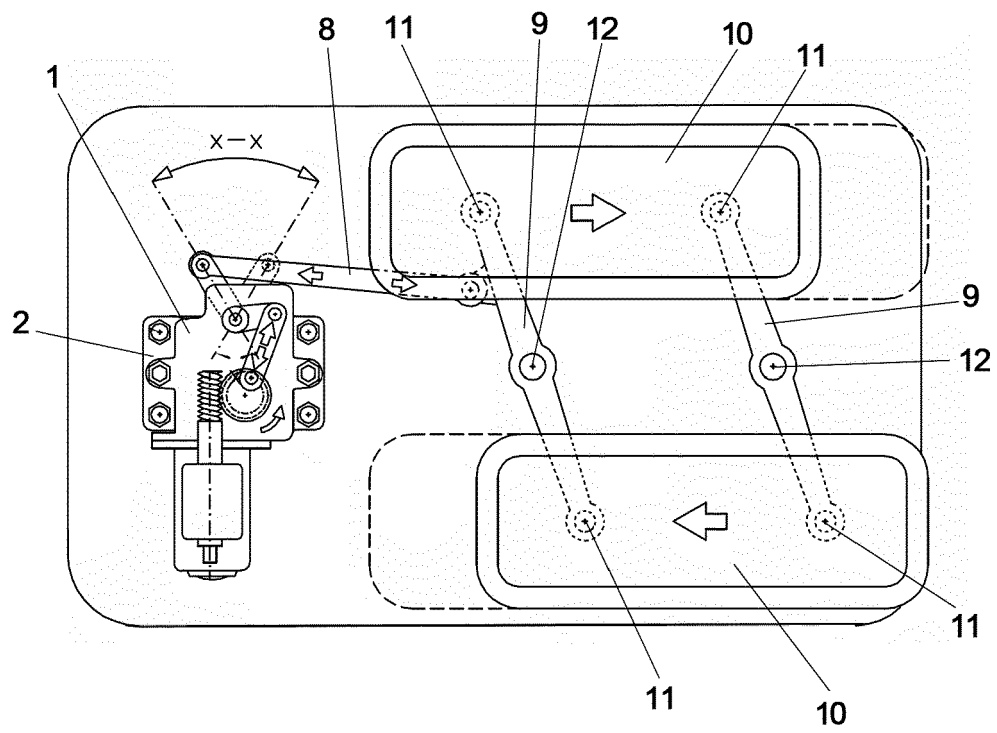


FIG.1

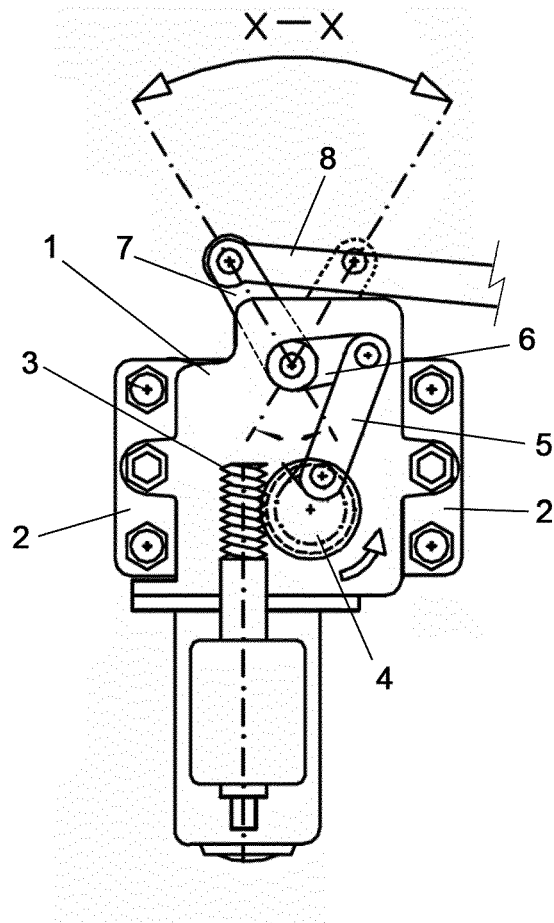
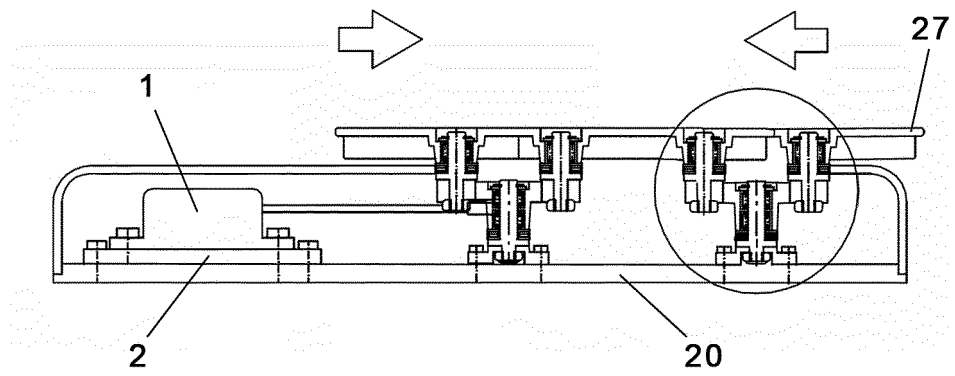


FIG.2



**FIG.3**



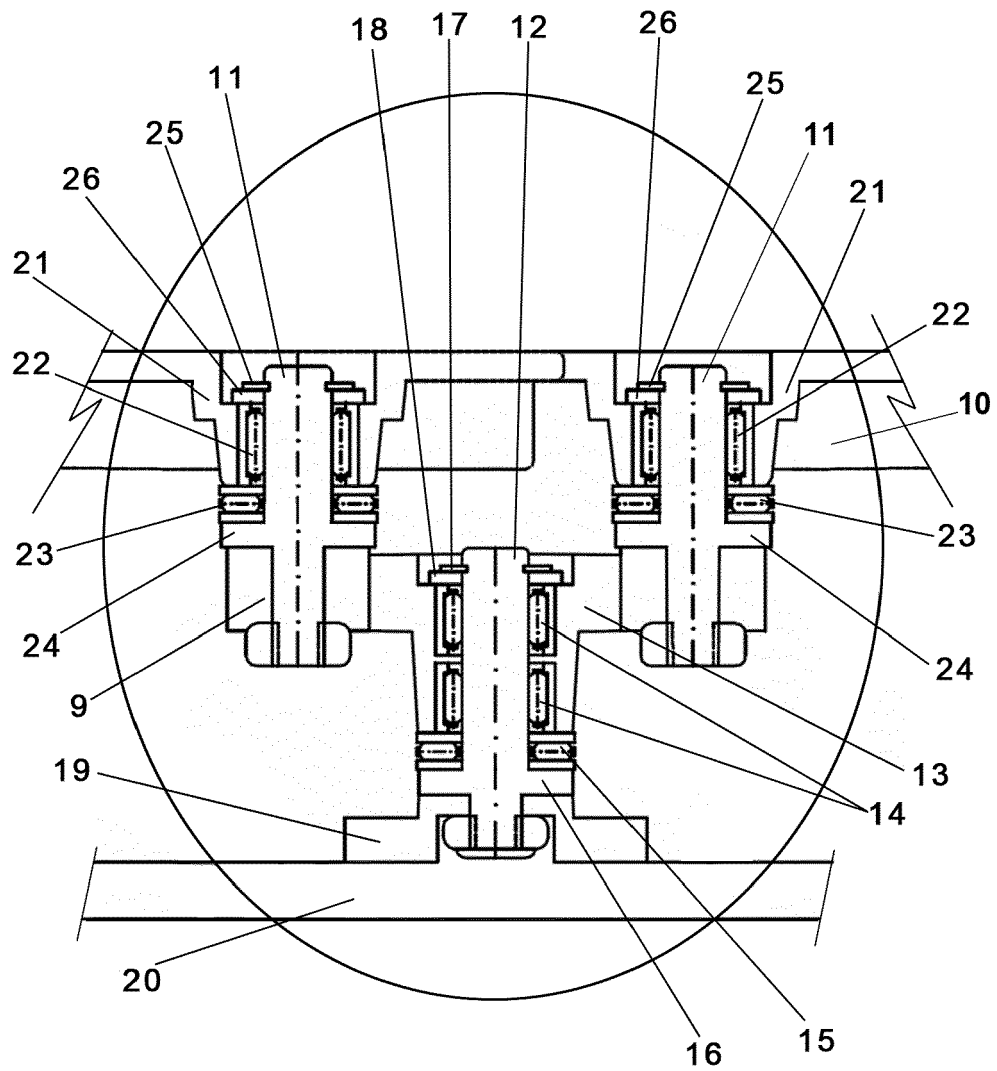
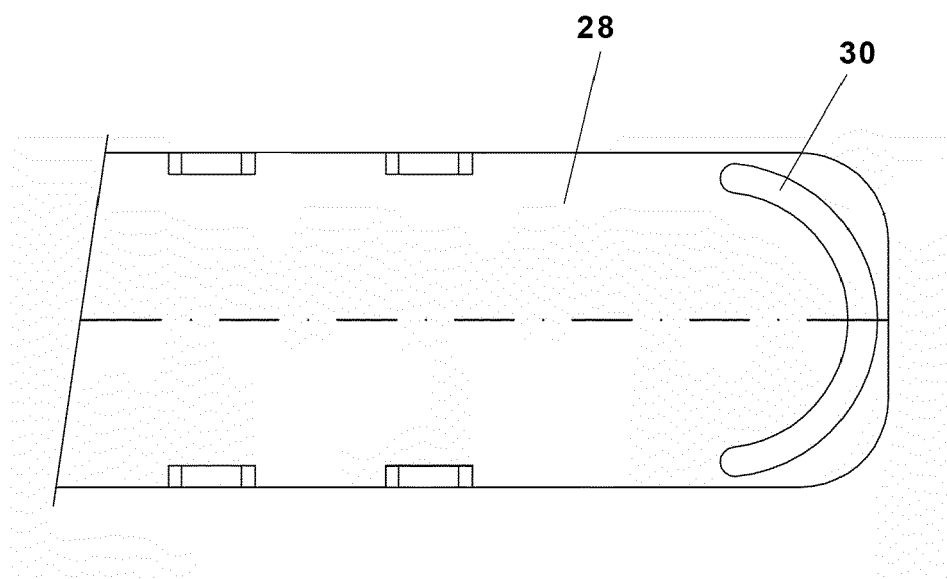


FIG.4



**FIG.5**

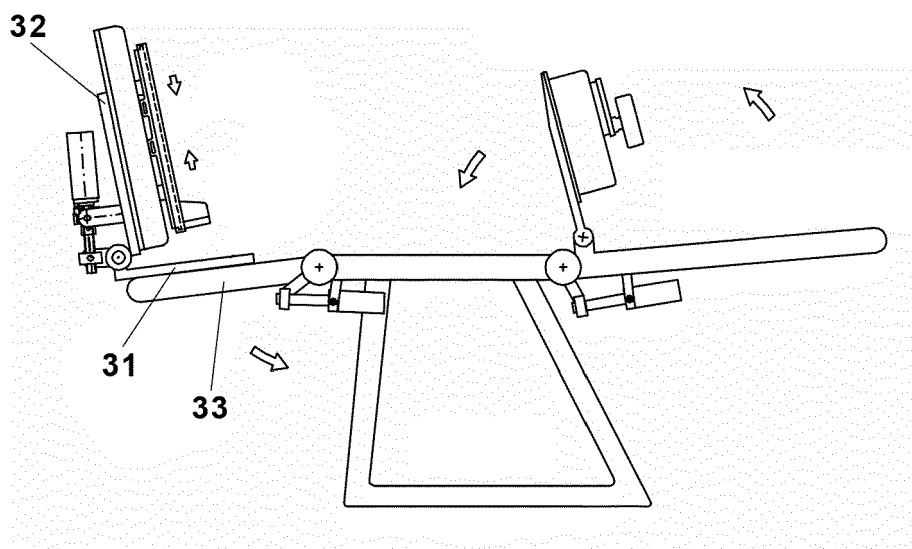


FIG. 6

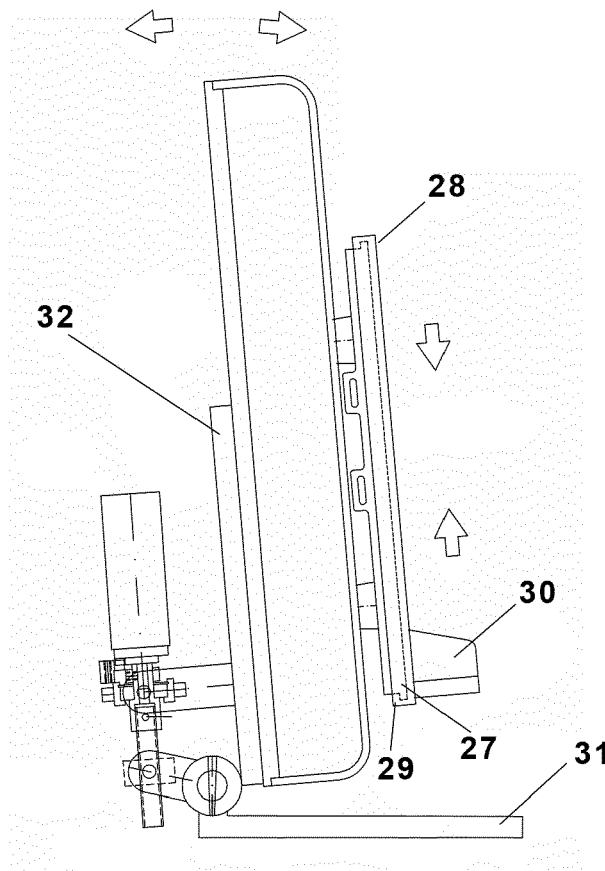


FIG. 7

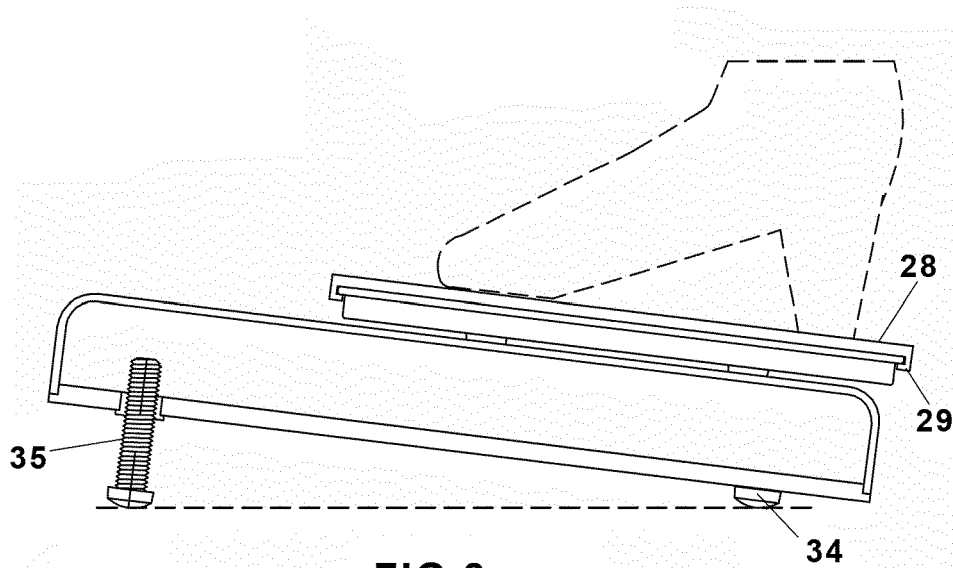


FIG. 8

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/ES2018/070254

## A. CLASSIFICATION OF SUBJECT MATTER

A61H1/02 (2006.01)

A63B23/08 (2006.01)

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)

A61H, 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

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2013079196 A1 (FREY HELMUT) 28/03/2013, the whole document	1-4
A	US 6500094 B1 (LIN SHU TING) 31/12/2002, the whole document	1-4
A	US 2014364279 A1 (CHEN JUE-YAO) 11/12/2014, the whole document	1-4
A	EP 0285438 A2 (HEATON SAMUEL) 05/10/1988, the whole document	1-4
A	WO 2014197385 A1 (SACKNER MARVIN ET AL.) 11/12/2014, the whole document	1-4

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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Date of the actual completion of the international search  
11/06/2018

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2018/070254

C (continuation).	DOCUMENTS CONSIDERED TO BE RELEVANT	
Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 205108258U U (GUANGDONG MINGKAI MEDICAL ROBOT CO LTD) 30/03/2016, Abstracts EPODOC and WPI and figures	1-4
A	EP 1166828 A1 (TAKIZAWA SHIGEO) 02/01/2002, the whole document	1-4

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

# EP 3 603 600 A1

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2018/070254

Information on patent family members

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
US2013079196 A1	28.03.2013	CA2810949 A1 CA2810949 C US9050483 B2 DE102010012676 A1 EP2549970 A2 EP2549970 B1 WO2011116755 A2 WO2011116755 A3	29.09.2011 24.04.2018 09.06.2015 29.09.2011 30.01.2013 09.05.2018 29.09.2011 24.11.2011
US6500094 B1	31.12.2002	DE20121842U U1 DE10149902 A1	28.08.2003 17.04.2003
US2014364279 A1	11.12.2014	US8986168 B2	24.03.2015
EP0285438 A2	05.10.1988	US4862875 A GB2203651 A GB2203651 B ES2029714T T3	05.09.1989 26.10.1988 14.08.1991 01.09.1992
WO2014197385 A1	11.12.2014	NZ714225 A BR112015029909 A2 RU2015150257 A RU2015150257 A3 HK1217425 A1 MX2015016597 A JP2016523611 A US2016128889 A1 US9622933 B2 CN105431124 A CN105431124B B KR20160016849 A CA2914868 A1 CA2914868 C AU2014275182 A1 AU2014275182B B2 EP2986265 A1 EP2986265 A4	25.05.2018 25.07.2017 14.07.2017 28.03.2018 13.01.2017 22.07.2016 12.08.2016 12.05.2016 18.04.2017 23.03.2016 20.04.2018 15.02.2016 11.12.2014 17.04.2018 03.12.2015 21.12.2017 24.02.2016 21.09.2016
CN205108258U U	30.03.2016	EP2986265 A1 EP2986265 A4	
EP1166828 A1	02.01.2002	NONE	07.04.2011
		JP2011067635 A JP5238918B B2 JP2011036707 A JP4743562B B2 JP2010000363 A JP5238917B B2 JP2009291624 A JP4743557B B2 US2008125294 A1 US7641591 B2 US2004198564 A1	17.07.2013 24.02.2011 10.08.2011 07.01.2010 17.07.2013 17.12.2009 10.08.2011 29.05.2008 05.01.2010 07.10.2004

Form PCT/ISA/210 (patent family annex) (January 2015)

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2018/070254

Information on patent family members

5

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55

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
		US7322904 B2	29.01.2008
		US2004210168 A1	21.10.2004
		US7481739 B2	27.01.2009
		US6780142 B1	24.08.2004
		JP2001170207 A	26.06.2001
		JP2000233031 A	29.08.2000
		JP4487054B B2	23.06.2010
		WO0035539 A1	22.06.2000
		AU2004201137 A1	22.04.2004
		AU2004201137B B2	18.10.2007
		AU2004201136 A1	22.04.2004
		AU2004201136B B2	24.11.2005
		AU768647B B2	03.07.2000
		AU1688900 A	03.07.2000
-----	-----	-----	-----

Form PCT/ISA/210 (patent family annex) (January 2015)



**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

- ES 2178590 [0008]
- ES 2499815 [0034]