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(54) **Lifting device for a treadmill**

(57) The present invention relates to a lifting device for a treadmill. A lifting motor (41) with a locating transmission spindle (40) is pivotably connected to the front end of the base frame (20). A socket (42) is movable backward and forward by means of the rotational movement of the locating transmission spindle (40) while the other end of the socket (42) is pivotably connected to the top of an inverted-T-shaped cross bar (26) which extends beyond both sides of the base frame (20) and is

connected with a pull rod (27), respectively. The other end of each of pull rods (27) is pivotably connected to the upright support (10), thereby forming a pivot point (28). Accordingly, when the lifting motor (41) is actuated to let the socket (42) rotate by means of the rotational movement of the locating transmission spindle (40), the inverted-T-shaped cross bar (26) and the pull rod (27) will move in the desired direction. Therefore, the base frame (20) will be moved upward and downward on the pivot point (28).

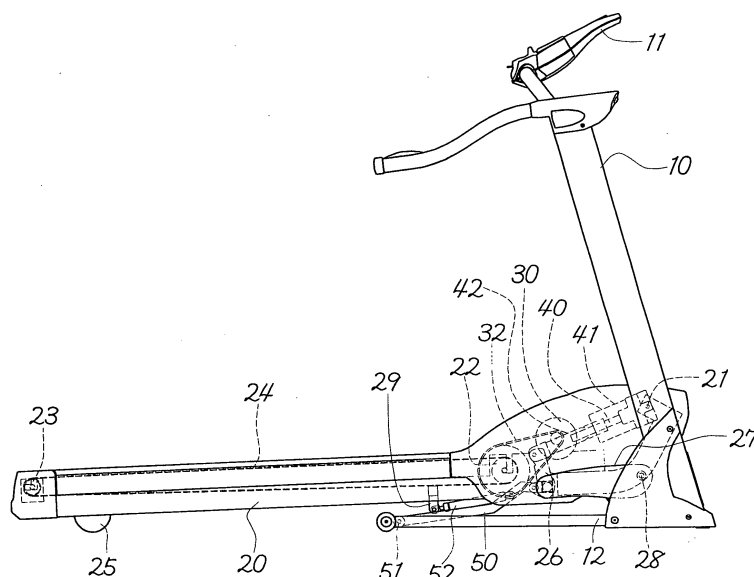


FIG.1

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Description

[0001] The present invention relates to a lifting device for a treadmill, and more particularly, to a device which has simple components and efficiently reduces the manufacturing and assembling costs.

[0002] The lifting device of the treadmill is used to adjust the supporting angle of the base frame of the treadmill, that is, the walking slope. This device can be mechanically or electrically operated. The present invention belongs to an electric lifting device.

[0003] Referring to FIGS. 5 through 8, a well-known lifting device for a treadmill includes a motorized transmission assembly 61 on a base frame 60. A slide rail 62 is arranged at the both inner sides of the base frame 60 so that two supporting parts 64 with rollers 63 can slide in the slide rail 62 for a forward and backward movement. Consequently, a walking frame 65 thereof is pivotably connected to the top of the supporting parts 64.

[0004] In order to strengthen the supporting force of the supporting parts 64, an auxiliary supporting rod 66 has to be interposed between the top of the supporting parts 64 and the base frame 60, thereby causing the complexity of the whole components and increasing the assembly and component costs.

[0005] It is a primary object of the present invention to remove the above-mentioned drawbacks and to provide a lifting device for a treadmill which has a simple component unit while the same effect is achieved so that the economical effect and the assembly convenience are attainable. Meanwhile, the supporting force is easily controllable. In addition, an upright support together with a pull rod connected to the frame creates a pivot point. Accordingly, the potential drawbacks in using the conventional lifting device are removed.

[0006] 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 side view of the present invention;

FIG. 2 is a schematic drawing in accordance with FIG. 1, showing the action thereof;

FIG. 3 is a schematic drawing of the preferred embodiment in accordance with FIG. 1 in the folding-up state of a base frame;

FIG. 4 is a perspective view of FIG. 3;

FIG. 5 is a partial perspective view of a conventional lifting device;

FIG. 6 is a side view of FIG. 5;

FIG. 7 is a schematic drawing in accordance with FIG. 5, showing the action thereof; and

FIG. 8 is a schematic drawing in accordance with FIG. 5 in the folding-up state of the base frame.

[0007] First of all, referring to FIG. 1 and 2, a preferred embodiment of the present invention includes an upright support 10 and a base frame 20. The upright support 10 is mounted at both sides of the front end of the base

frame 20. A console 11 is disposed at the top of the upright support 10 while a horizontal leg 12 is connected to the bottom thereof. The base frame 20 has a first cross bar 21 on which a walking belt transmission assembly 30 is mounted while a front roller 22 is driven in motion by means of a transmission belt 32. A walking belt 24 is rotatable by means of the front roller 22 and a rear roller 23. A support wheel 25 is fitted to both bottom inner sides at the rear end of the base frame 20.

[0008] A lifting motor 41 with a locating transmission spindle 40 is pivotably connected to the front end of the base frame 20. A socket 42 is movable backward and forward by means of the rotational movement of the locating transmission spindle 40 while the other end of the socket 42 is pivotably connected to the top of an inverted-T-shaped cross bar 26 which extends beyond both sides of the base frame 20 and is connected with a pull rod 27, respectively. The other end of each of the pull rods 27 is pivotably connected to the upright support 10, thereby forming a pivot point 28. Accordingly, when the lifting motor 41 is actuated to let the socket 42 rotate by means of the rotational movement of the locating transmission spindle 40, the inverted-T-shaped cross bar 26 and the pull rod 27 will move in the desired direction. Therefore, the base frame 20 will be moved upward and downward on the pivot point 28.

[0009] As illustrated in FIGS 3 and 4, the base frame 20 can be folded up in a storage state by means of the pivoting effect of the pivot point 28. Thus, in order to stably support the base frame 20, a support bar 50 is pivotably connected at the lower side of the inverted-T-shaped cross bar 26 while the other end of the support bar 50 is pivotably connected to a support element 52. Thereafter, the axle of the support element 52 is pivotably secured to a second cross bar 29 of the base frame 20.

[0010] In brief, when the base frame 20 is folded up, the support element 51 constantly offers a proper supporting force in the horizontal direction to prevent it from an unexpected toppling.

Claims

1. A lifting device for a treadmill comprising:

an upright support (10) mounted at both sides of the front end of a base frame (20), a console being disposed at the top thereof while a horizontal leg (12) is connected to the bottom thereof; and

a base frame having a first cross bar (21) on which a walking belt transmission assembly (30) is mounted while a front roller (22) is driven in motion by means of a transmission belt (32), a walking belt (24) being rotatable by means of said front roller (22) and a rear roller (23), a support wheel (25) being fitted to both bottom inner

sides at the rear end of said base frame (20);

wherein the improved lifting device for a treadmill is
characterized by:

a lifting motor (41) with a locating transmission
spindle (40) pivotably connected to the front
end of said base frame (20), a socket (42) being
movable backward and forward by means of
the rotational movement of said locating trans-
mission spindle (40) while the other end of said
socket (42) is pivotably connected to the top of
an inverted-T-shaped cross bar (26) which ex-
tends beyond both sides of said base frame
(20) and is connected with a pull rod (27), re-
spectively, the other end of each of said pull
rods (27) being pivotably connected to said up-
right support (10), thereby forming a pivot point
(28).

2. The lifting device for a treadmill as recited in claim
1, **characterized in that** a support bar (50) is piv-
otably connected at the lower side of said inverted-
T-shaped cross bar (26) while the other end of said
support bar (50) is pivotably connected to a support
element (52) so that the axle of said support ele-
ment (52) is pivotably secured to a second cross
bar (29) of said base frame (20).

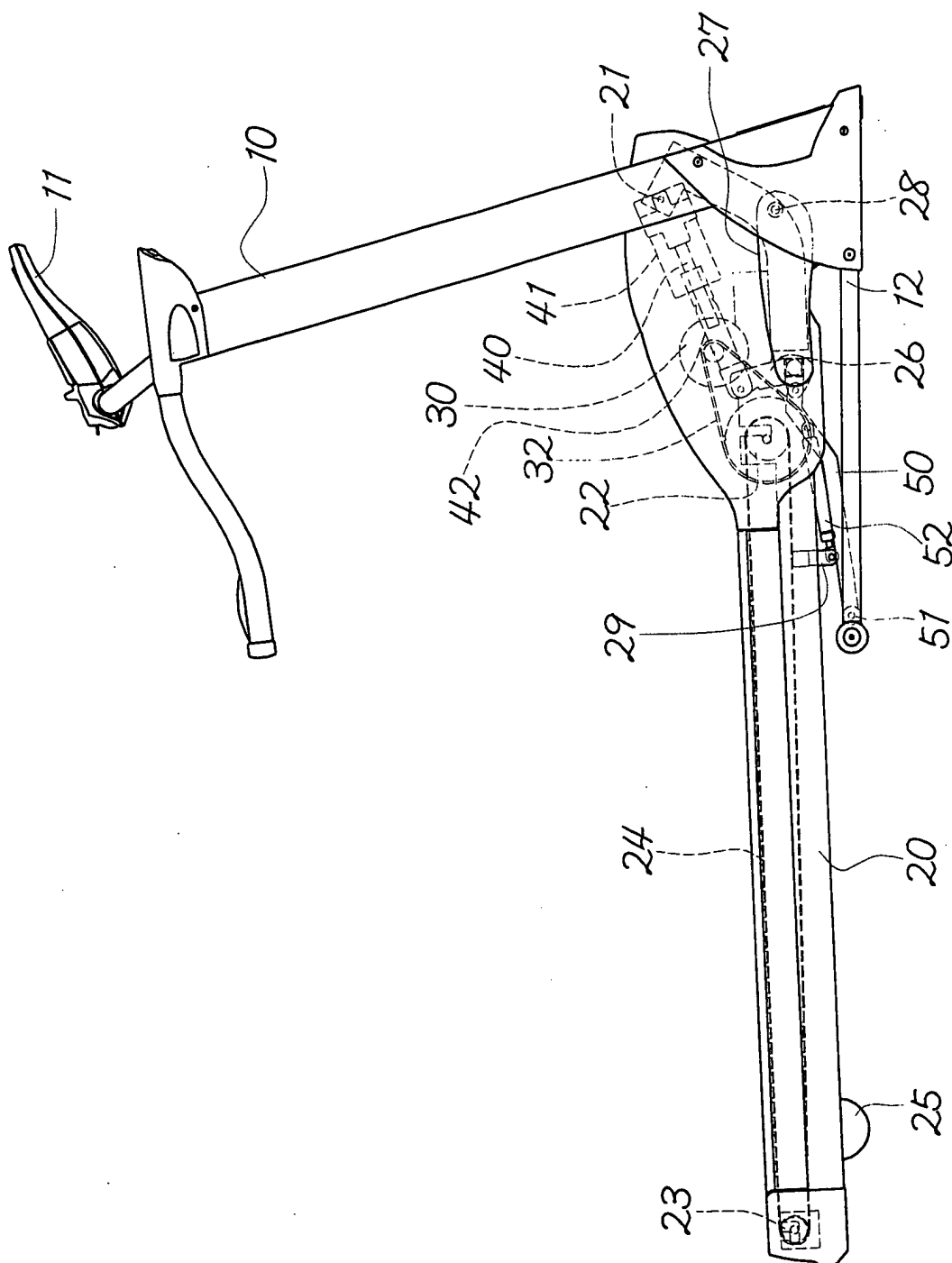


FIG. 1

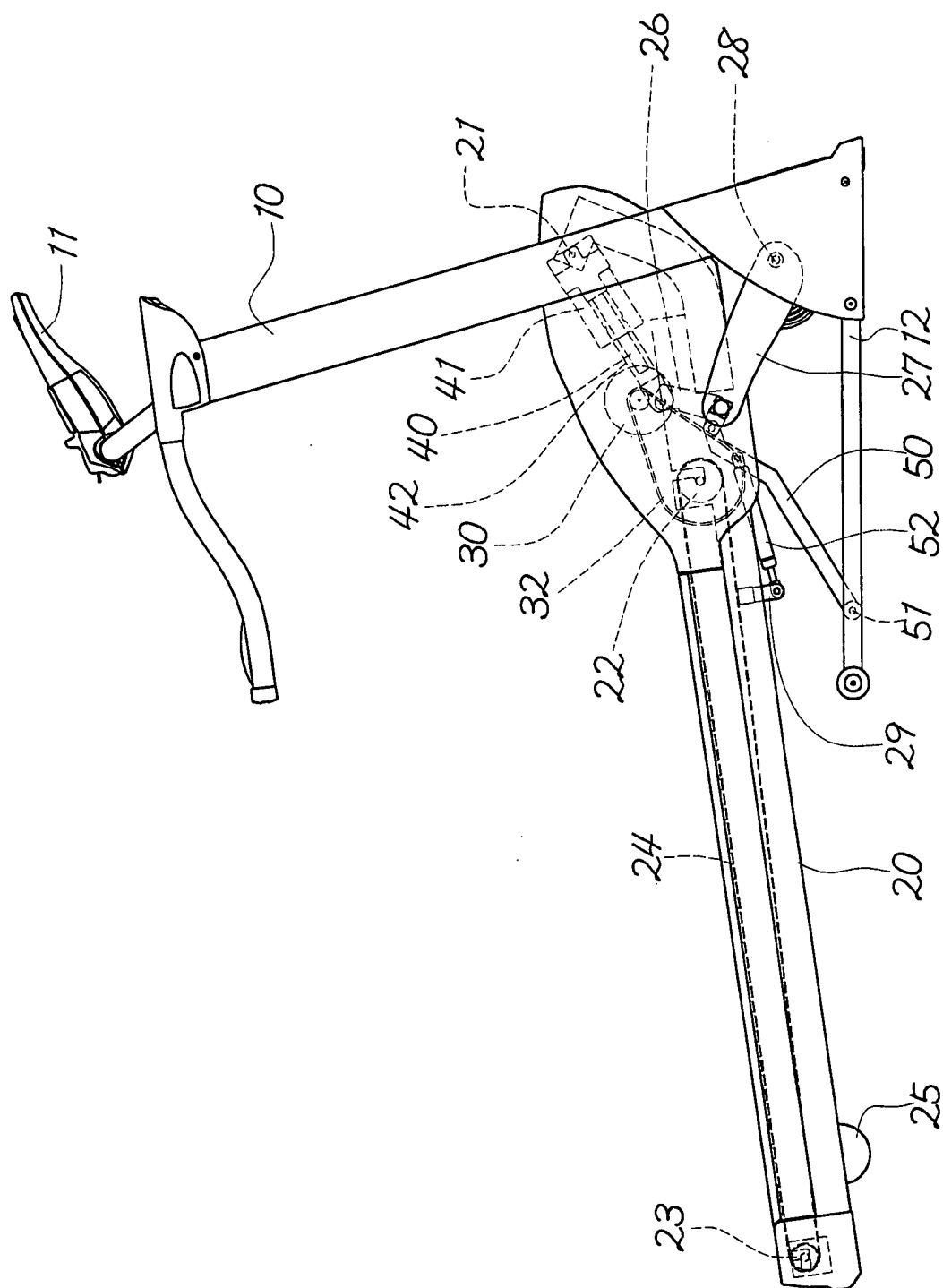


FIG. 2

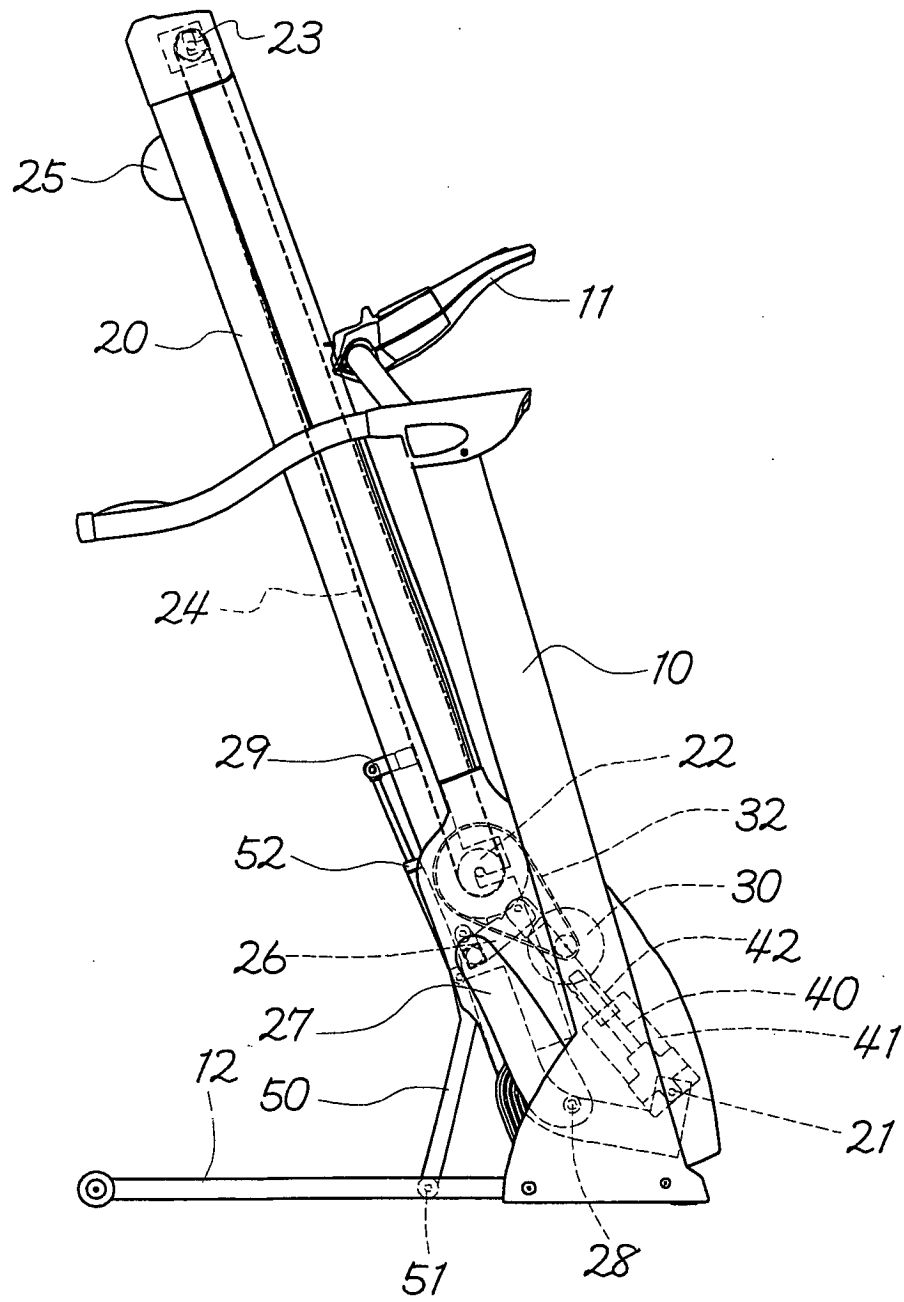


FIG.3

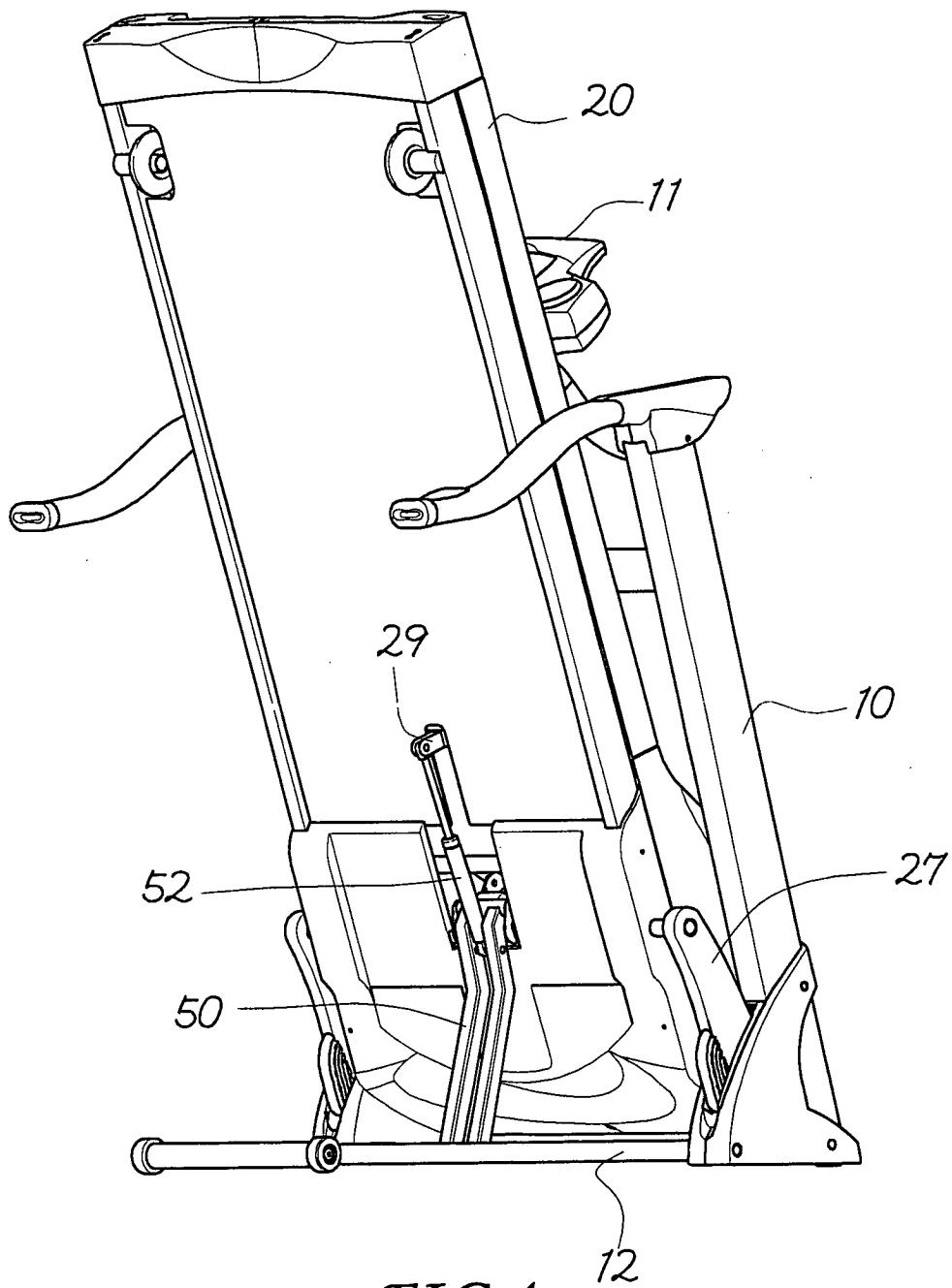


FIG. 4

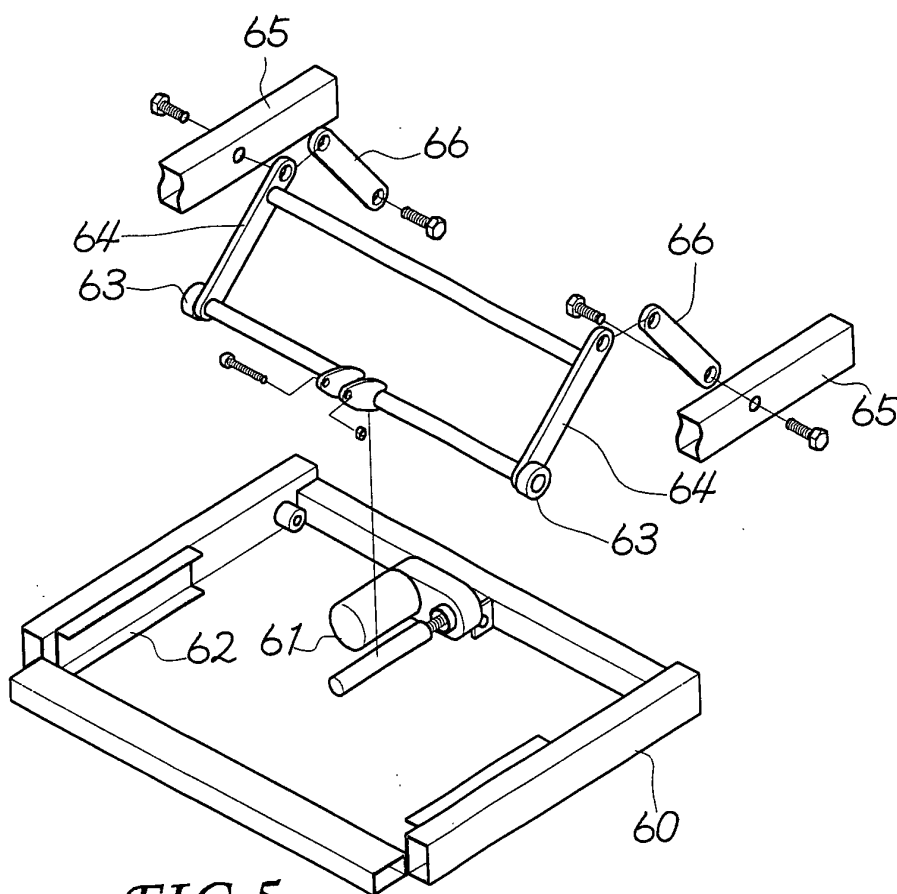


FIG. 5
PRIOR ART

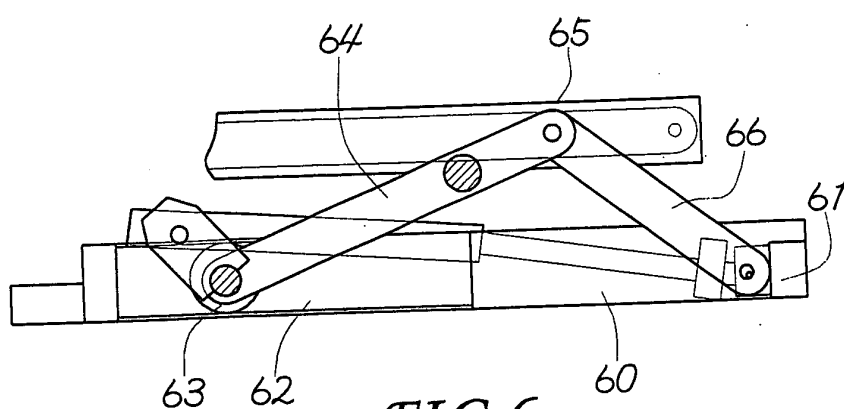
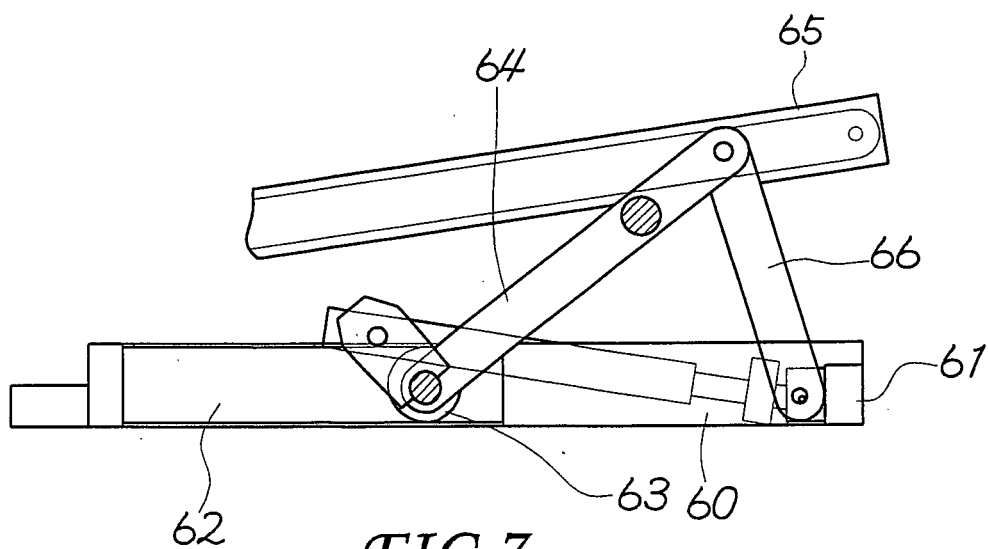
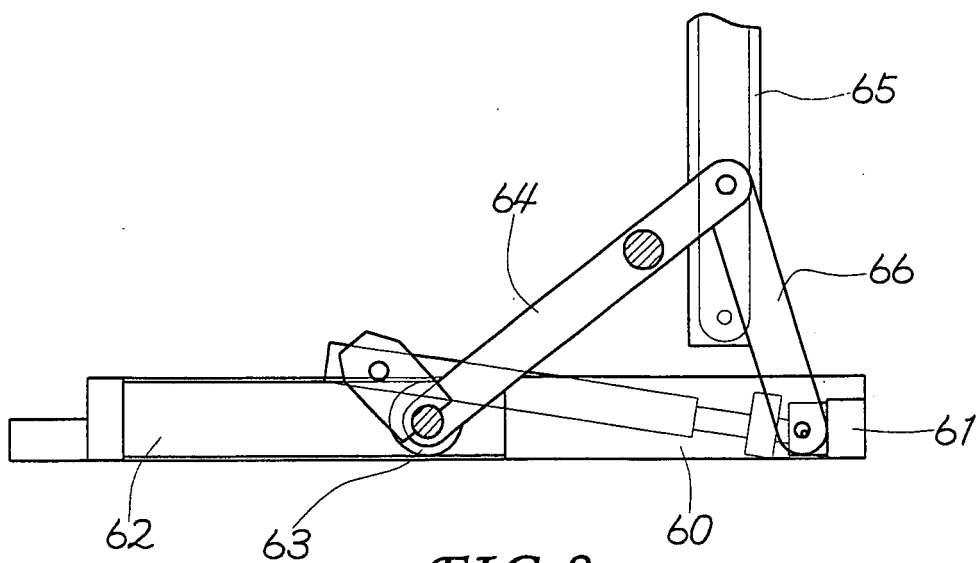


FIG. 6
PRIOR ART



PRIOR ART



PRIOR ART



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EUROPEAN SEARCH REPORT

Application Number
EP 03 00 9082

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.7)
X	US 6 325 745 B1 (YU JESSICA) 4 December 2001 (2001-12-04) * the whole document *	1,2	A63B22/02
A	DE 201 10 451 U (ALILIFE IND CO) 13 December 2001 (2001-12-13) * the whole document *	1,2	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 3 September 2003	Examiner Knoflachner, N
CATEGORY OF CITED DOCUMENTS		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	
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 00 9082

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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03-09-2003

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82