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(72) Inventors:
• **Chuang, Jin Chen**
42083 Fong Yuan
Taichung Hsien (TW)
• **Chuang, Lung Fei**
42083 Fong Yuan
Taichung Hsien (TW)

(71) Applicants:
• **Chuang, Jin Chen**
42083 Fong Yuan
Taichung Hsien (TW)
• **Chuang, Lung Fei**
42083 Fong Yuan
Taichung Hsien (TW)

(74) Representative: **Beck, Michael Rudolf**
Beck & Rössig
Cuvilliesstrasse 14
81679 München (DE)

(54) **Elliptical exercise device**

(57) An exercise device includes two cranks (30) rotatably coupled to a frame (11) of a base (10), two handles (40) pivotally coupled to the frame, and two foot supports (50) each having a front portion (51) pivotally coupled to a rod (31) or an extended arm (32) of the cranks with a link (52) and each having a rear portion (53) pivotally coupled to the rear portion (15) of the base, and the lower portions (43) of the handles (40) are pivotally coupled to the foot supports (50) to allow the moving stroke of the foot supports to be controlled by the handles. The handles may be pivotally coupled to the cranks (30) with levers (57). A foot pedal (56) may be pivotally supported on each of the foot supports (50) and pivotally coupled to the handles (50).

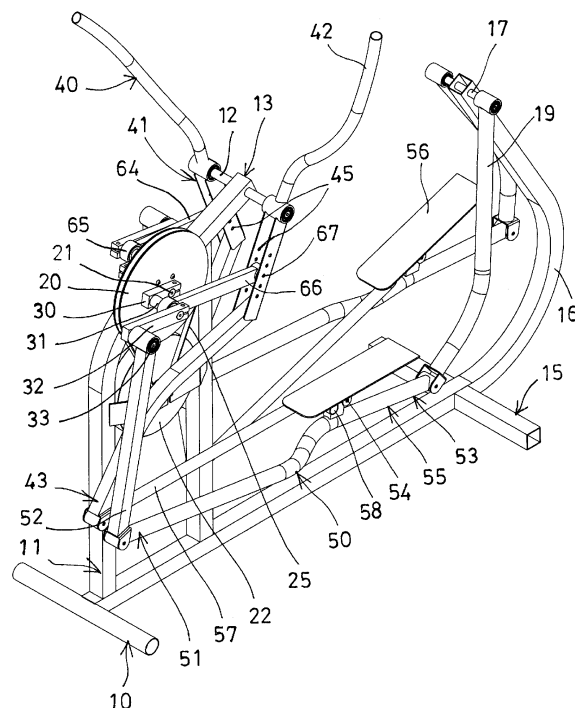


FIG. 1

Description

[0001] The invention relates to an elliptical exercise device adjustable to different moving strokes and workable either as a stepping exerciser or an elliptical exerciser.

[0002] Typical stepping exercisers comprise two foot supports pivotally coupled to two pivotal handles and to be stepped up and down relative to the base support device. However, the moving stroke may not be adjusted and the exerciser may not be worked either as a stepping exerciser or an elliptical exerciser.

[0003] The invention aims at providing an exercise device adjustable to different moving strokes, and workable either as a stepping exerciser or an elliptical exerciser.

[0004] The invention provides an exercise device according to claim 1. Further advantageous embodiments are laid down in further claims.

FIGS. 1, 2 are perspective views of an exercise device;

FIGS. 3, 4 are exploded views of the exercise device; and

FIGS. 5, 6, 7, 8 are side plan views of the exercise device.

[0005] Referring to FIGS. 1-5, an exercise device 1 comprises an frame 11 extended from a base 10 for supporting a spindle 12 at a rear portion 13, a wheel 20 and a flywheel 22 attached to the middle portion 14 of the frame 11 with a shaft 21 and an axle 23, a follower 24 attached to the axle 23 (FIGS. 3, 4) and coupled to the wheel 20 with a sprocket-and-chain or gearing belt coupler 25 for resisting the wheel 20 and the shaft 21, the other hydraulic or pneumatic or magnetic retarding devices may also be used to resist the wheel 20 and the shaft 21.

[0006] Two cranks 30 are secured to the shaft 21 and each include a rod 31 spaced from the shaft 21. Two handles 40 include a middle portion 41 attached to the spindle 12 and each include a hand grip 42 for being grasped by the users. Two arms 32 are secured to the rods 31 and each include a pin 33 spaced from the rods 31 and the shaft 21.

[0007] Two foot supports 50 each include a front portion 51 coupled to the pin 33 with a link 52, a rear portion 53 coupled to the rear portion 15 of the base 10 with a post 16 and an axle 17 and a connector 19, a rod 54 disposed on the middle portion 55 for supporting a pivotal foot pedal 56. The lower portions 43 of the handles 40 are each coupled to the foot supports 50 with a lever 57 which may be coupled to the rod 54 or the foot pedal 56 with a pole 58 (FIG. 5) for allowing the foot pedal 56 to be rotated relative to the foot supports 50 to different angles by the handles 40.

[0008] In operation, the handles 40 may be swung rel-

ative to the frame 11, and the rear portions 53 of the foot supports 50 may be swung relative to the post 16 of the base 10, and the front portions 51 of the foot supports 50 may be moved cyclically relative to the frame 11 by the arms 32 and the cranks 30, such that the foot pedals 56 of the foot supports 50 may be moved elliptically relative to the base 10 (FIGS. 6-8), the handles 40 may be controlled by the users to determine the moving stroke of the foot supports 50.

[0009] Two levers 64 each include one end 65 coupled to the rod 31 and the other end 66 coupled to the middle 41 of the handles 40 with a pin 67 for coupling the handles 40 together. The handles 40 each may include one or more orifices 45 formed in the middle 41 for adjustably engaging with the pin 67 and for adjusting the moving stroke of the foot pedal 56 or the foot supports 50. The moving strokes of the foot supports 50 may be controlled with the handles 40 when the levers 64 are disengaged from the handles 40 and the cranks 30.

Claims

1. An exercise device comprising

- a frame (11) extended from a base (10),
- a spindle (12) disposed on the frame (11),
- two cranks (30) coupled to the frame (11) with a shaft (21) and each including a rod (31) attached to the crank (30),
- two handles (40) including a middle portion (41) attached to the spindle (12) and each including a hand grip (42) and a lower portion,
- two foot supports (50) each including a front portion (51) and a rear portion (53) pivotally coupled to a rear portion of the base (11),

characterized in that:

- the front portions (51) of the foot supports (50) are pivotally coupled to the cranks (30) with a link (52) and movable cyclically relative to the frame by the cranks,
- the lower portions of the handles (40) are pivotally coupled to the foot supports (50) to allow the foot supports to be controlled by the handles to change a moving stroke of the foot supports, and
- two levers (64) are coupled between the rods (31) of the cranks (30) and the middle portions (41) of the handles (40) for coupling the handles to the rods of the cranks respectively.

2. The exercise device as claimed in claim 1, wherein the cranks (30) each include an arm (32) secured to the rod, and the links (52) are coupled to the arms.

3. The exercise device as claimed in claim 1 or 2,

wherein the levers (64) each include a first end (65) pivotally coupled to the rod (31), and a second end (66) adjustably coupled to the middle portion (41) of the handle (40) with a pin (67).

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4. The exercise device as claimed in claim 3, wherein the handles (40) each include a first orifice (45) formed in the middle portion (41) for engaging with the pin (67).

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5. The exercise device as claimed in claim 4, wherein the handles (40) each include at least one second orifice formed in the middle portion (41) for selectively engaging with the pin (67).

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6. The exercise device as claimed in any of claims 1 to 5, wherein a foot pedal (56) is pivotally supported on each of the foot supports (50) with a rod.

7. The exercise device as claimed in claim 6, wherein the lower portions of the handles (40) are each pivotally coupled to the foot pedals (56) of the foot supports with a lever (57).

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8. The exercise device as claimed in any of claims 1 to 8 further comprising a wheel (20) rotatably attached to the frame (11) with the shaft (21).

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9. The exercise device as claimed in any of claims 1 to 9, wherein the rear portions (53) of the foot supports (50) are pivotally coupled to the rear portion (15) of the base (10) with a connector (19).

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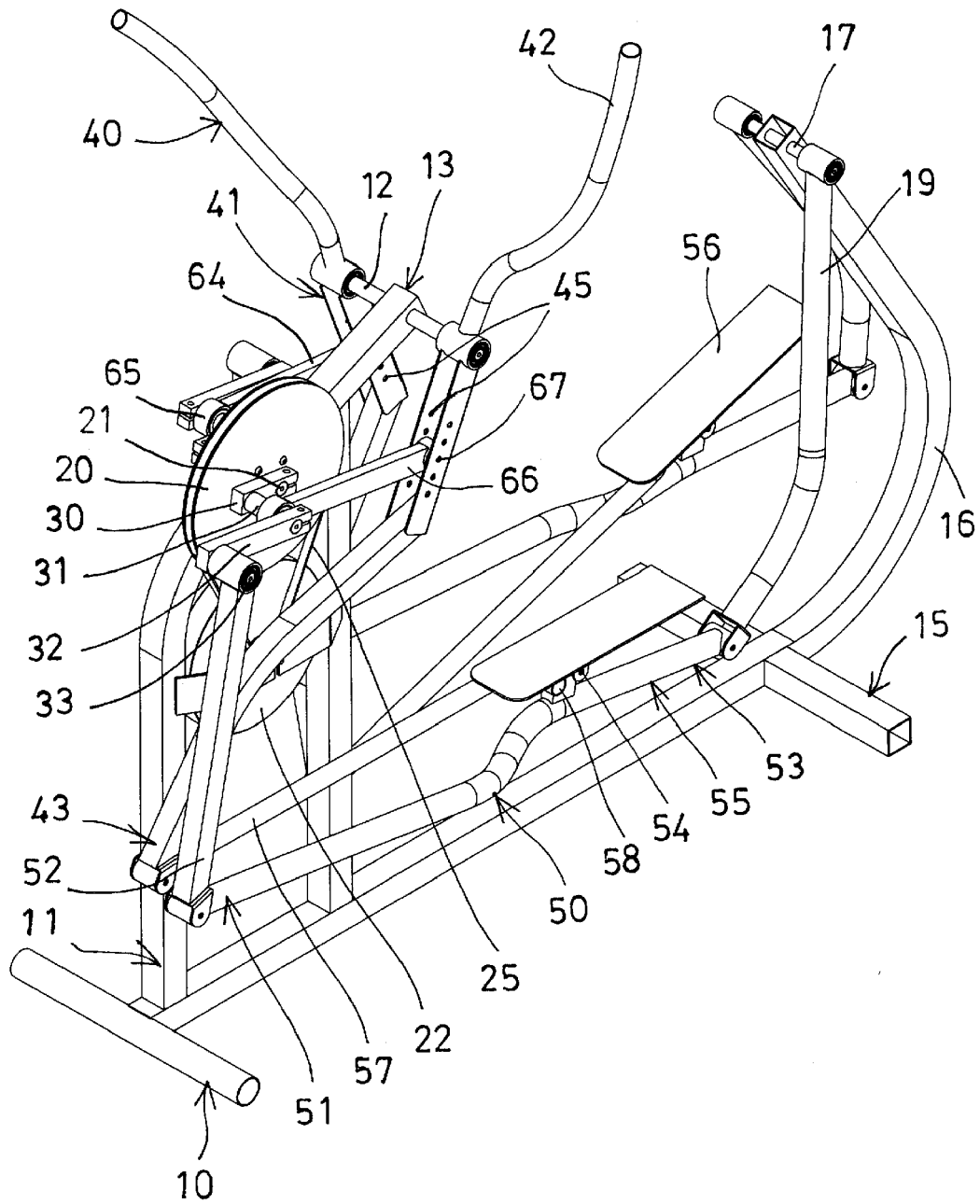


FIG. 1

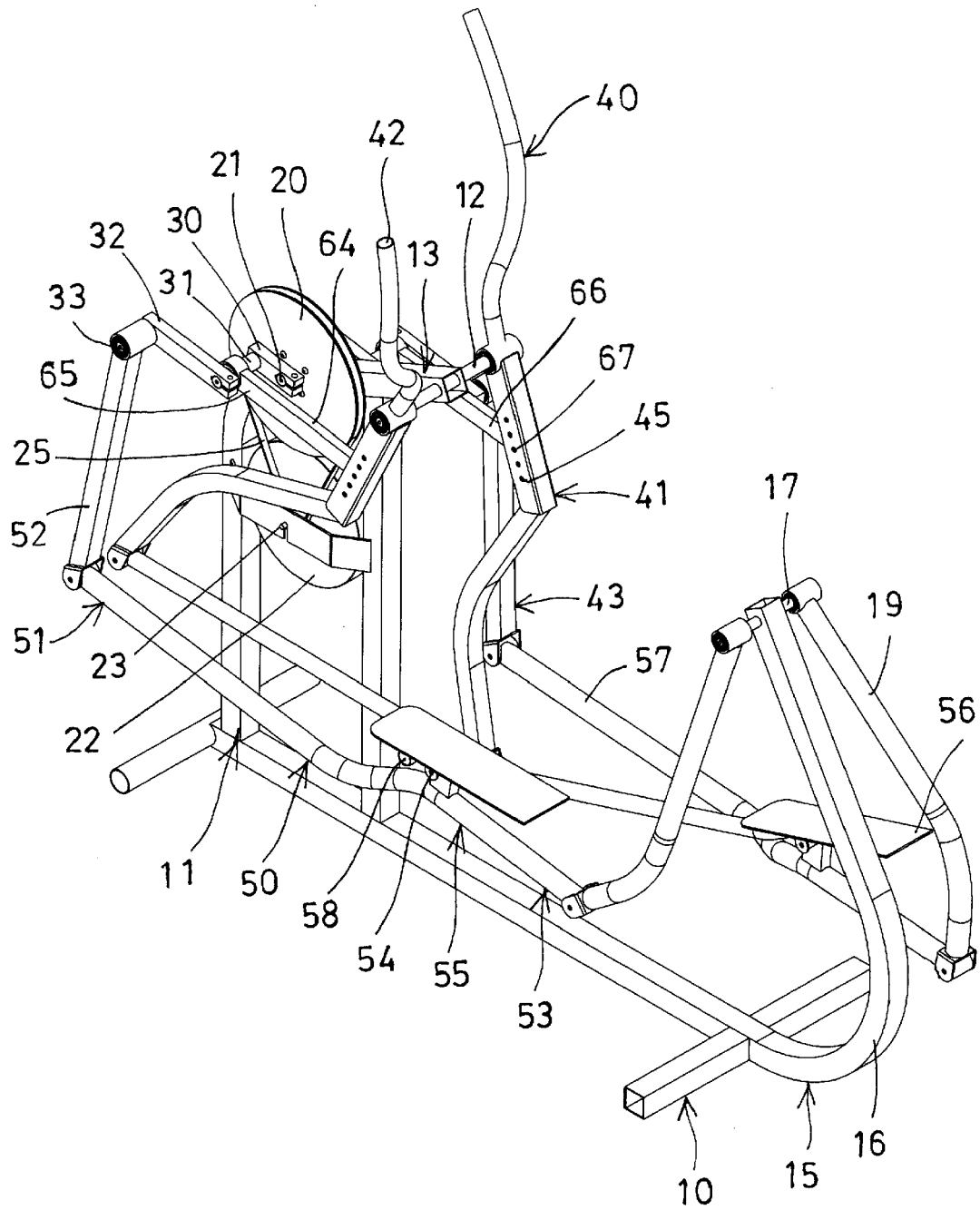


FIG. 2

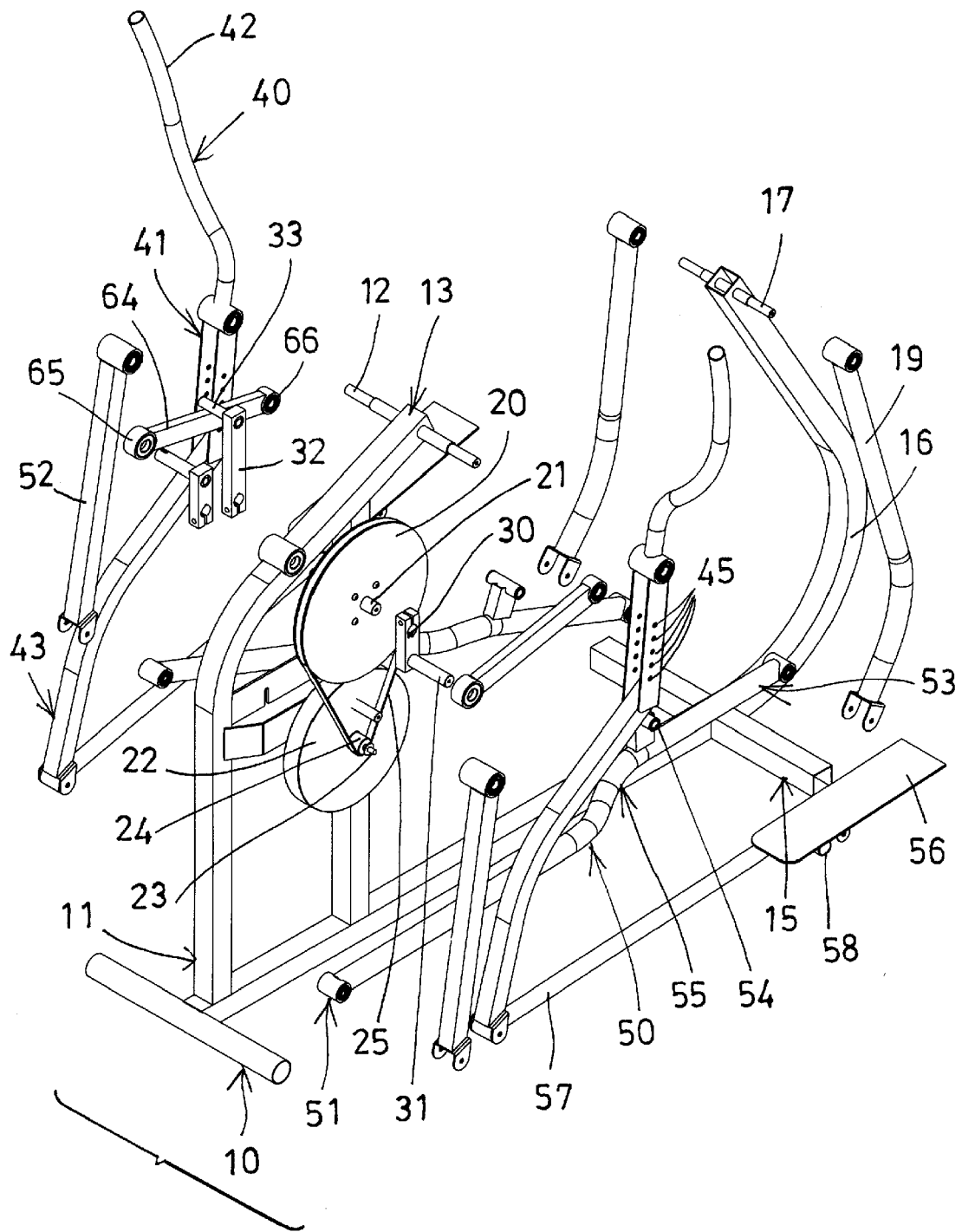


FIG. 3

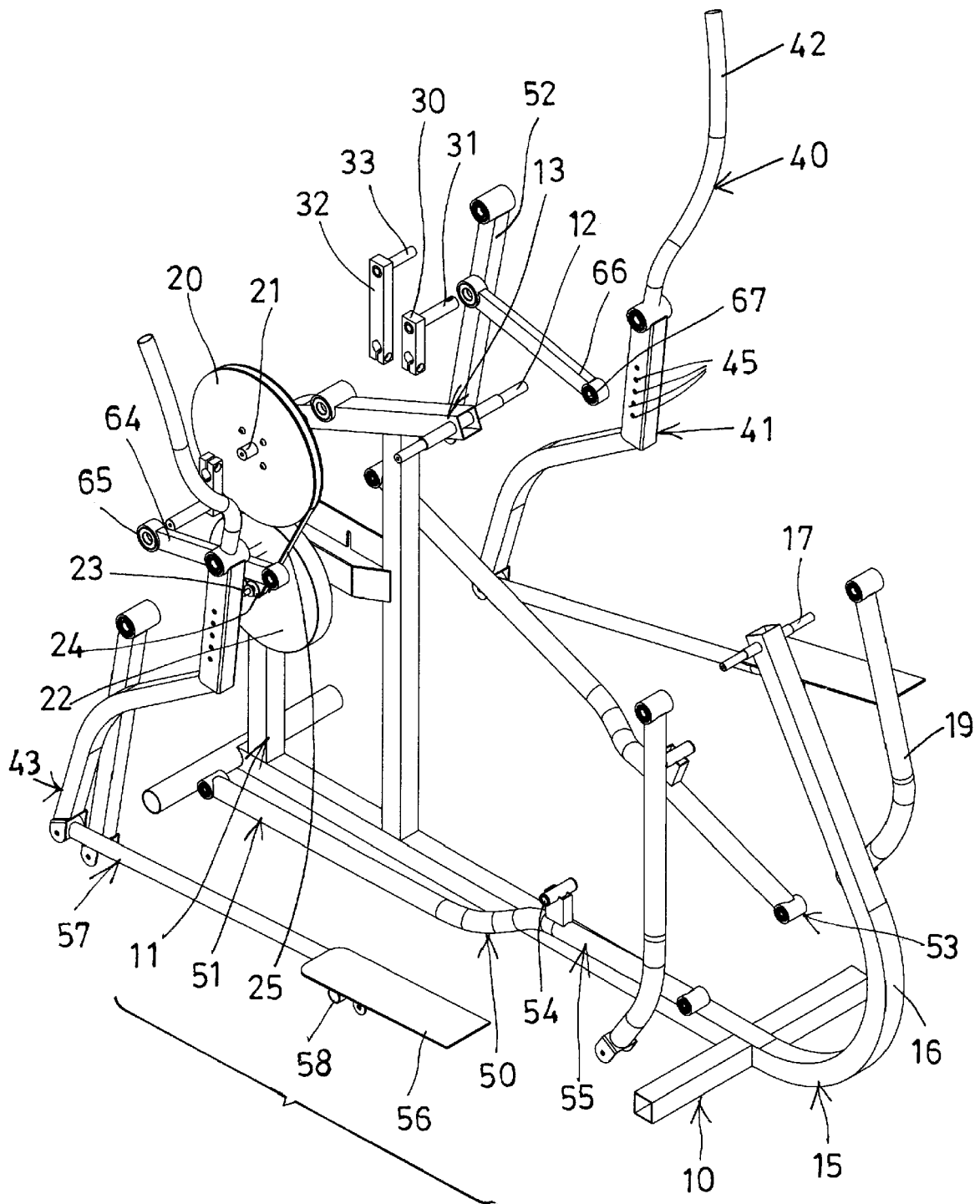


FIG. 4

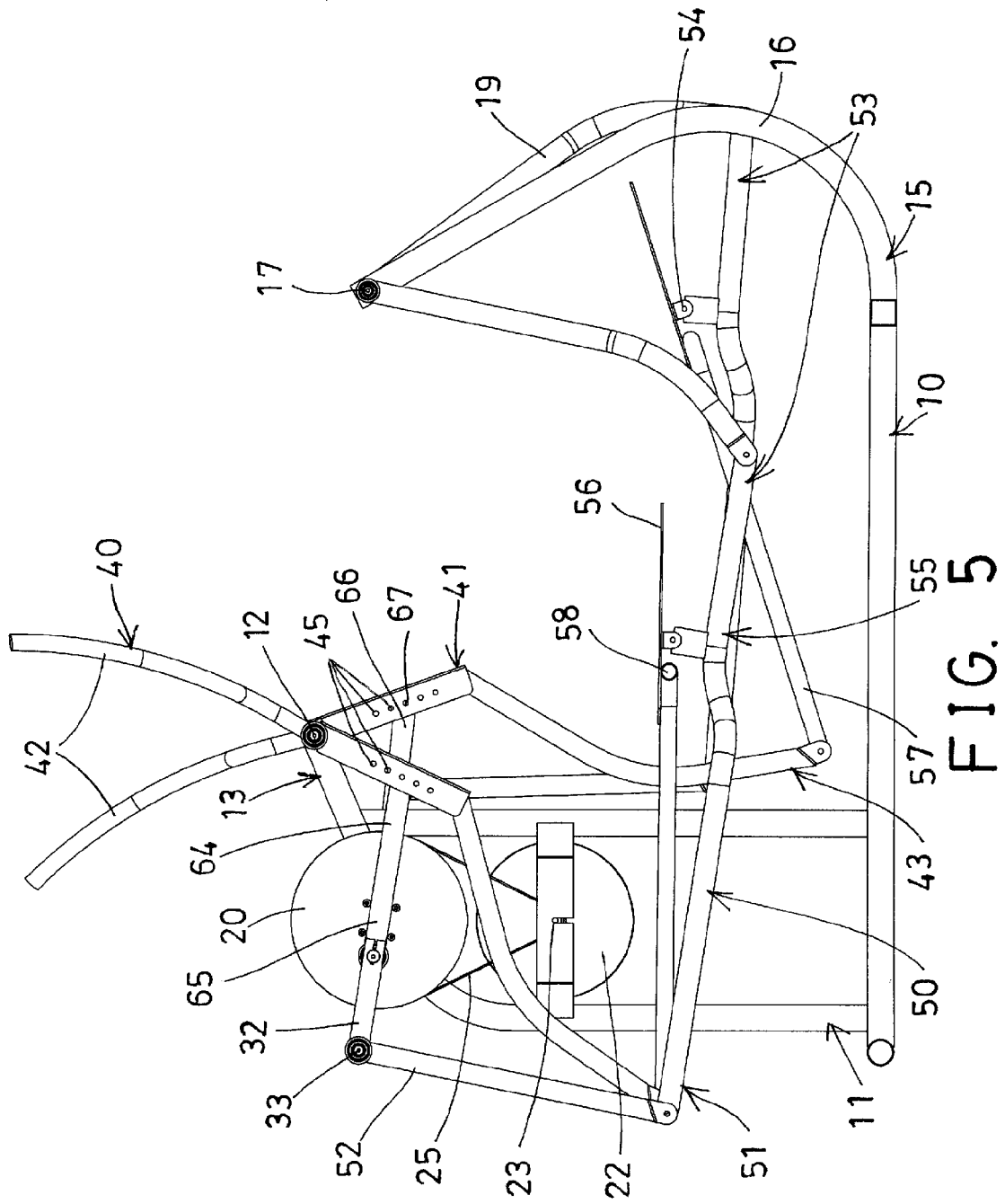


FIG. 5

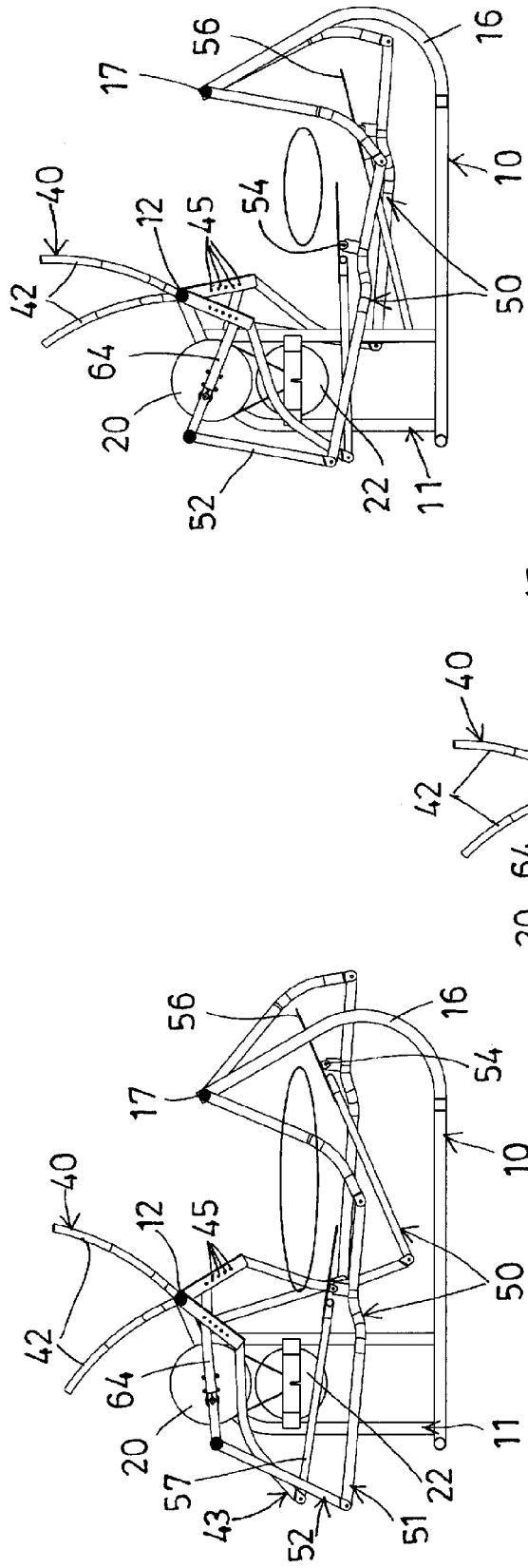


FIG. 6

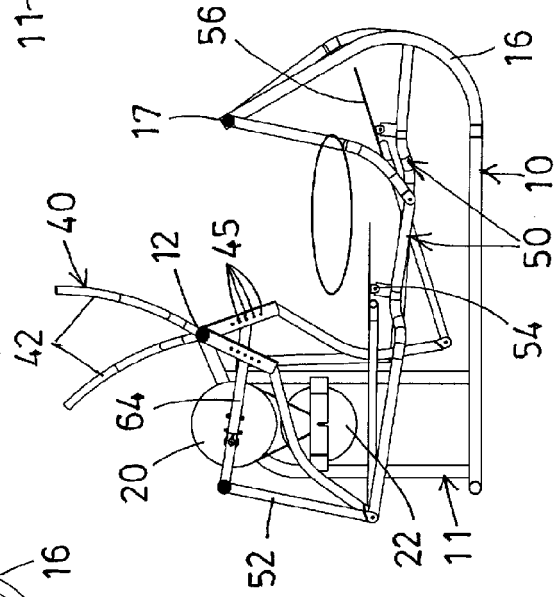


FIG. 7

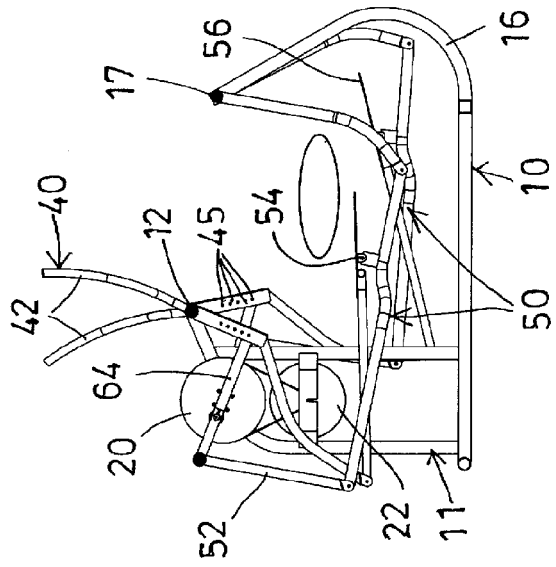


FIG. 8



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 11 6436

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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 February 2008	Examiner Jekabsons, Armands
CATEGORY OF CITED DOCUMENTS 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		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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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 07 11 6436

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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13-02-2008

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