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(54) **FOOTREST ASSEMBLY FOR A MASSAGE CHAIR**

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(57) **ABSTRACT**

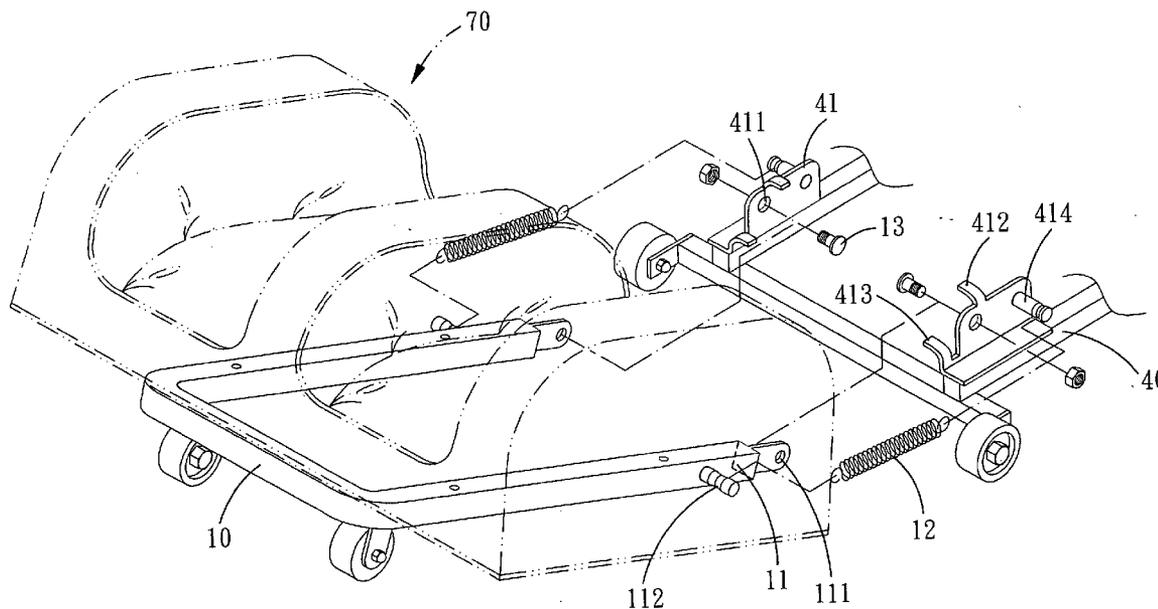
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A footrest assembly for a massage chair comprises a pivotal seat, a connecting seat, a stretchable rack, a connecting rod assembly and a motor assembly. A screw shaft is mounted on the connecting seat, and a drive block is screwed on the screw shaft. A first rail is mounted between the pivotal seat and the connecting seat. A second rail is mounted between the connecting seat and the stretchable rack, the connecting rod assembly is disposed between the pivotal seat and the stretchable rack, and the drive block drives the connecting rod assembly to move forward or backward. The motor assembly comprises a motor and a gear set and serves to rotate the screw shaft.

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第一圖

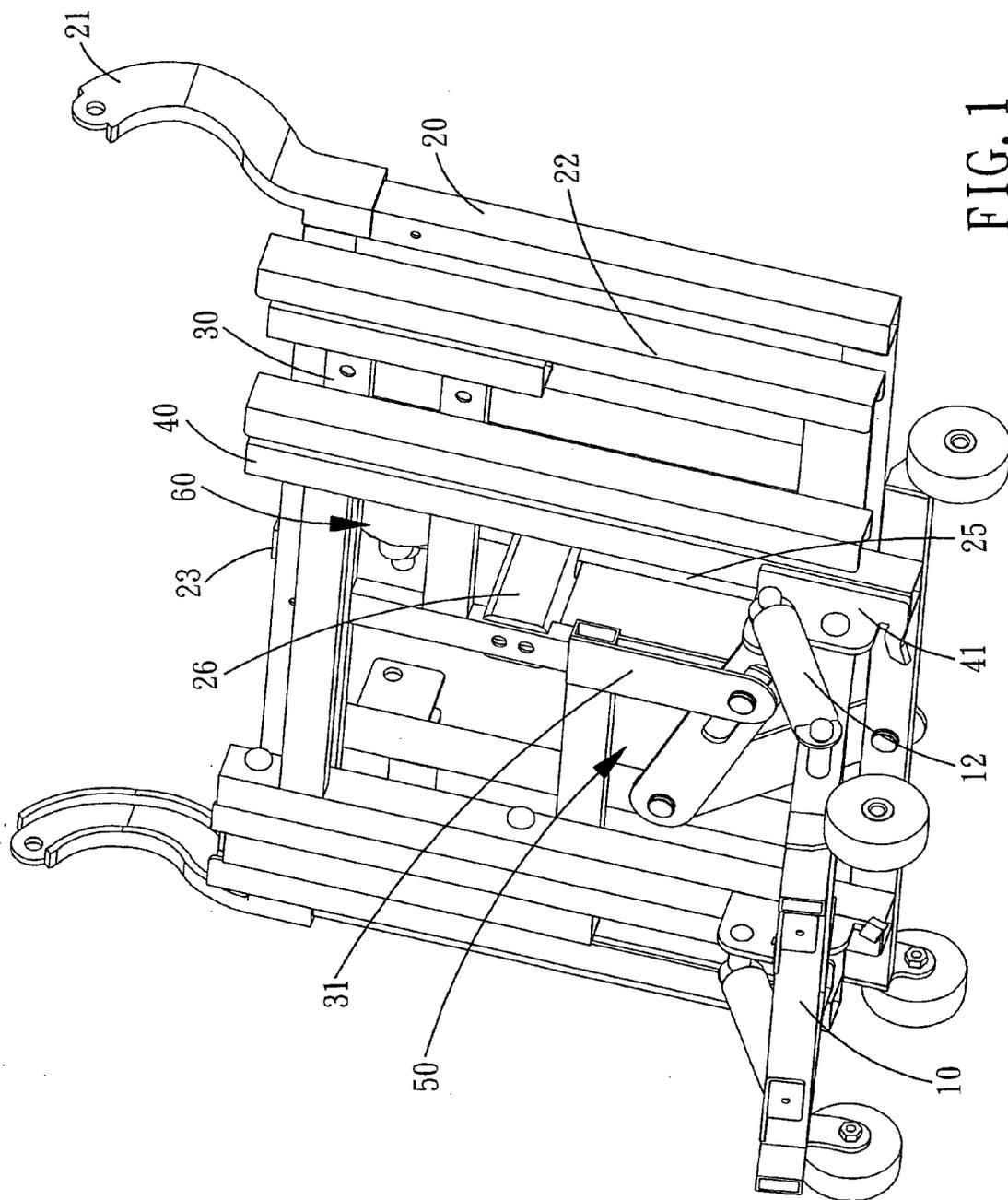
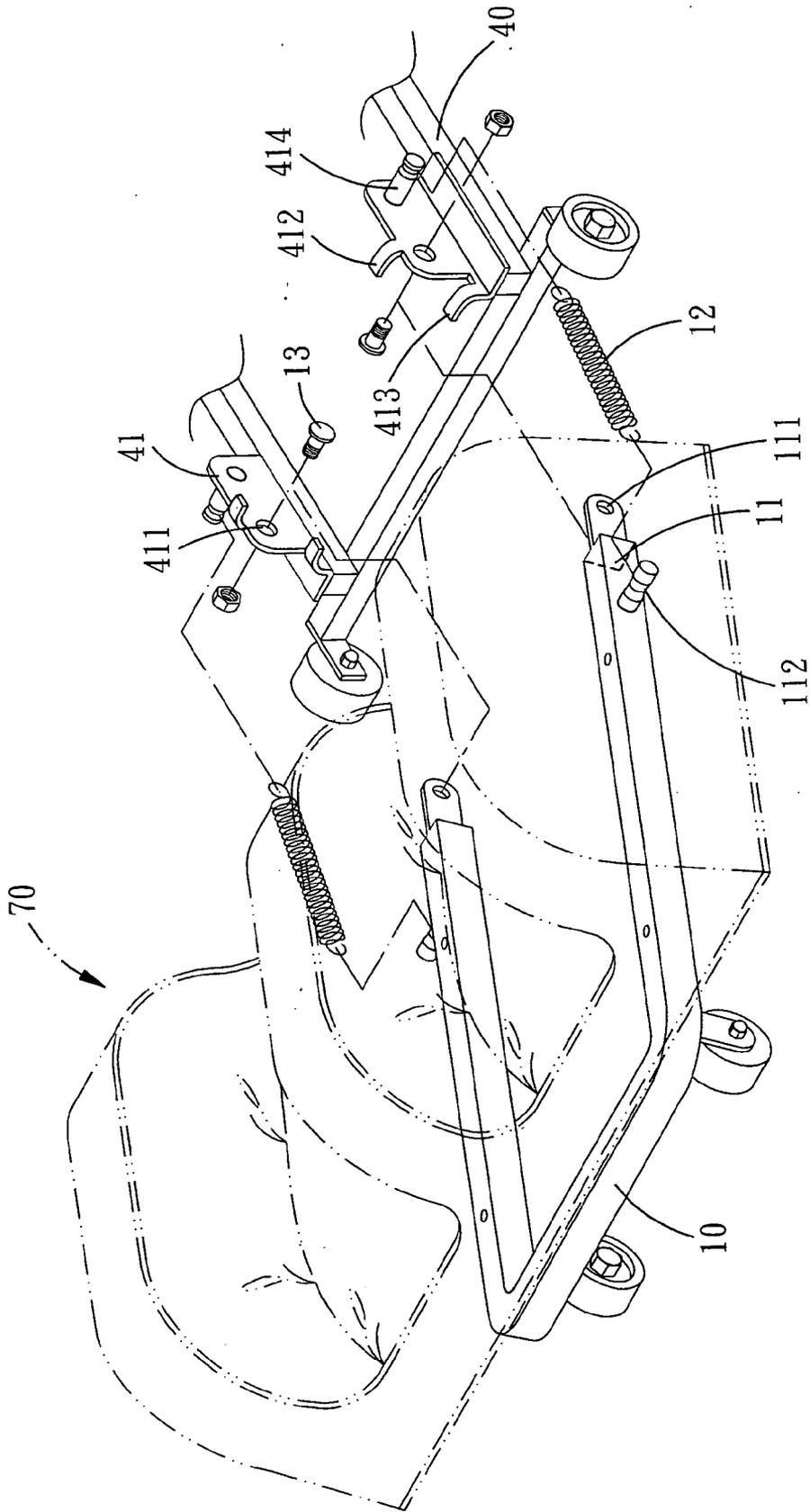


FIG. 1



第一圖

FIG. 2

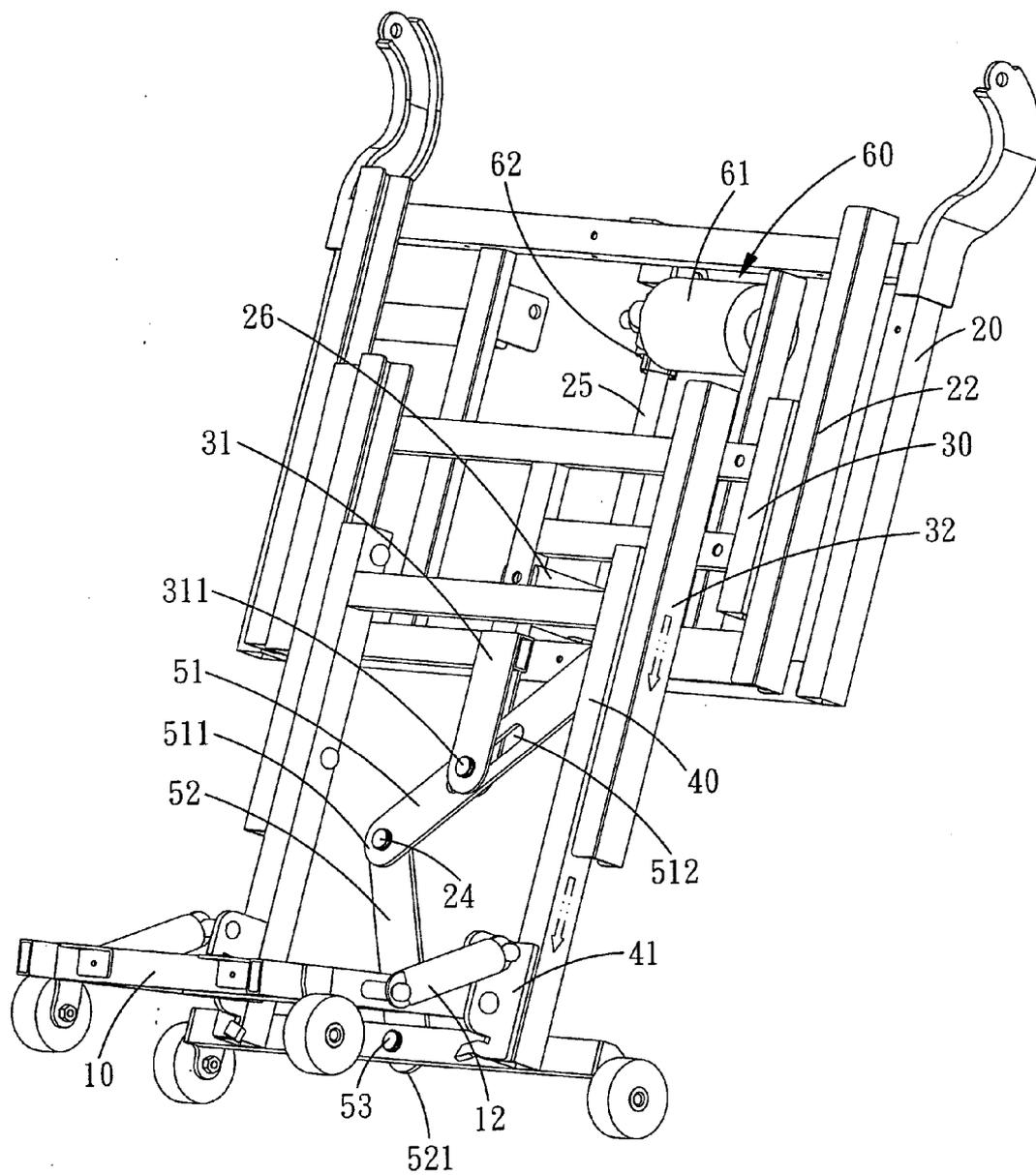


FIG. 3

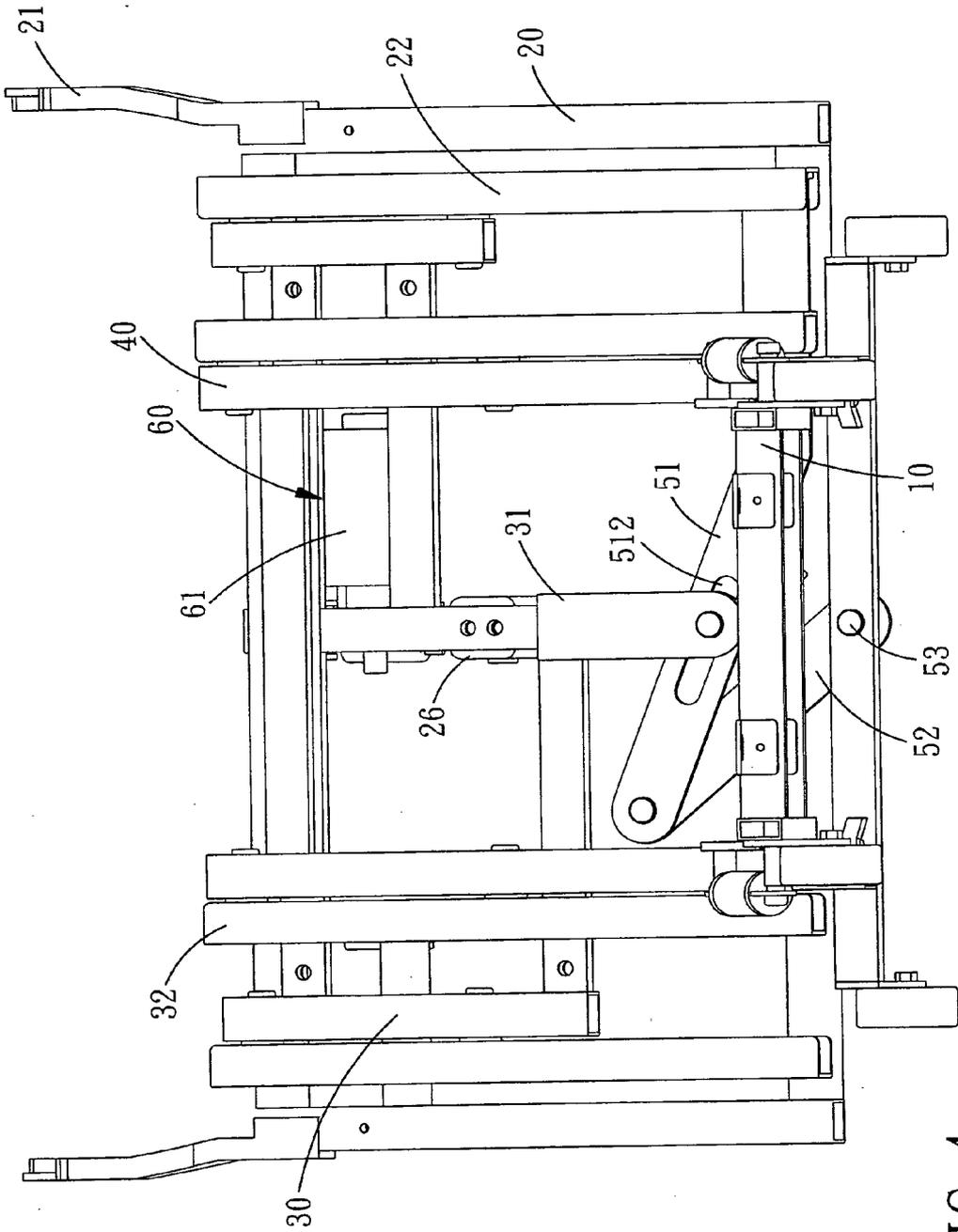


FIG. 4

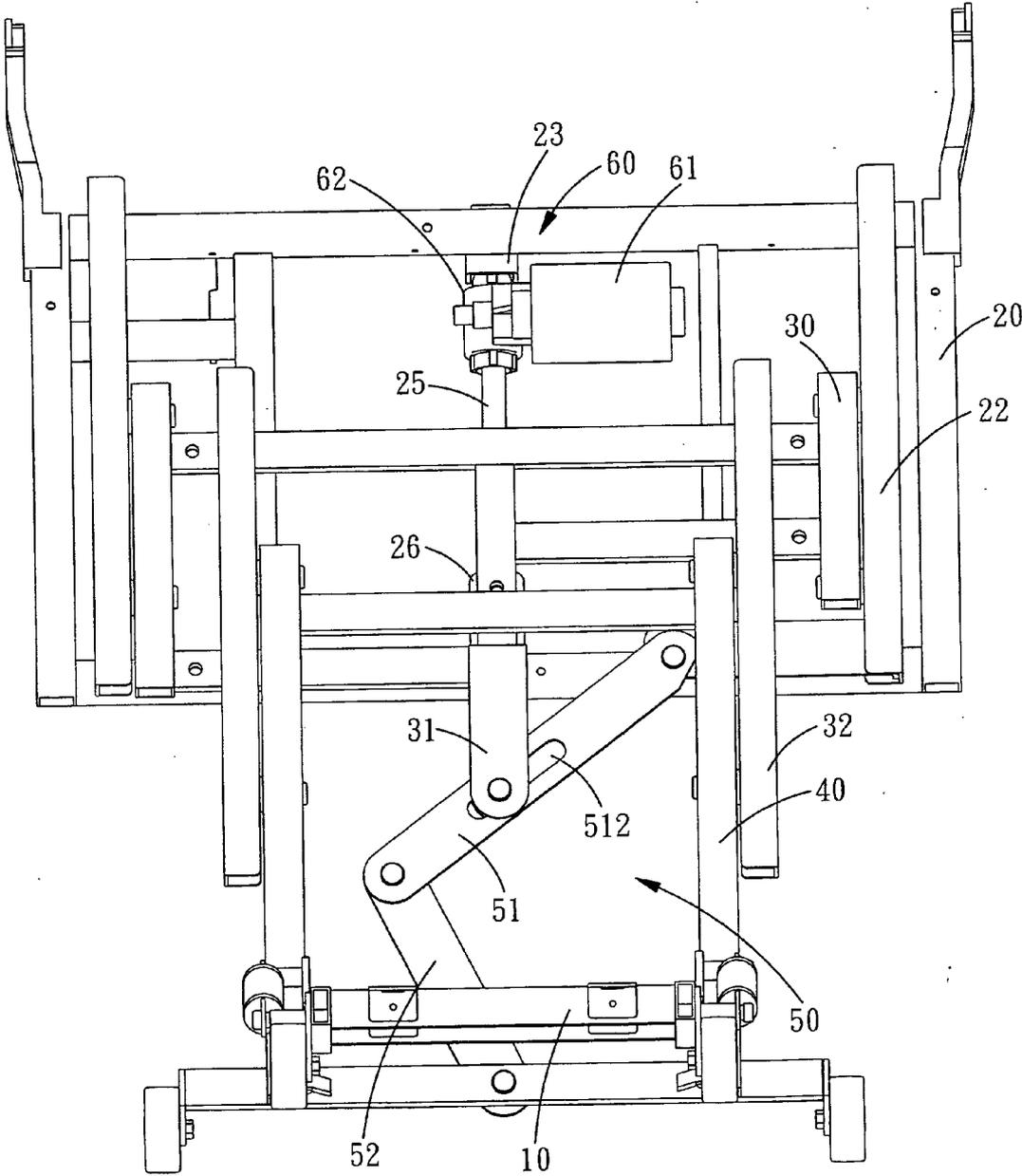


FIG. 5

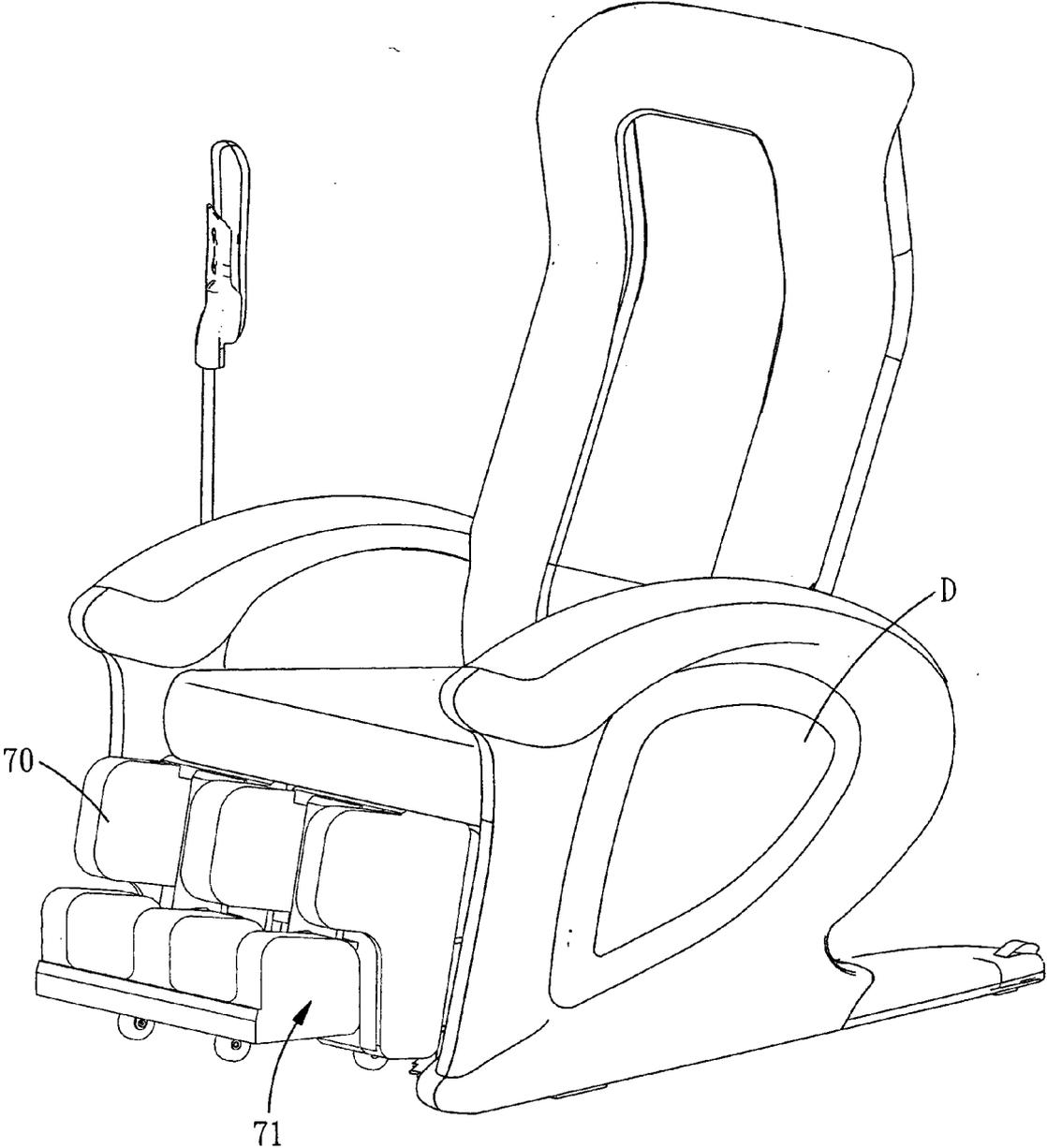


FIG. 6

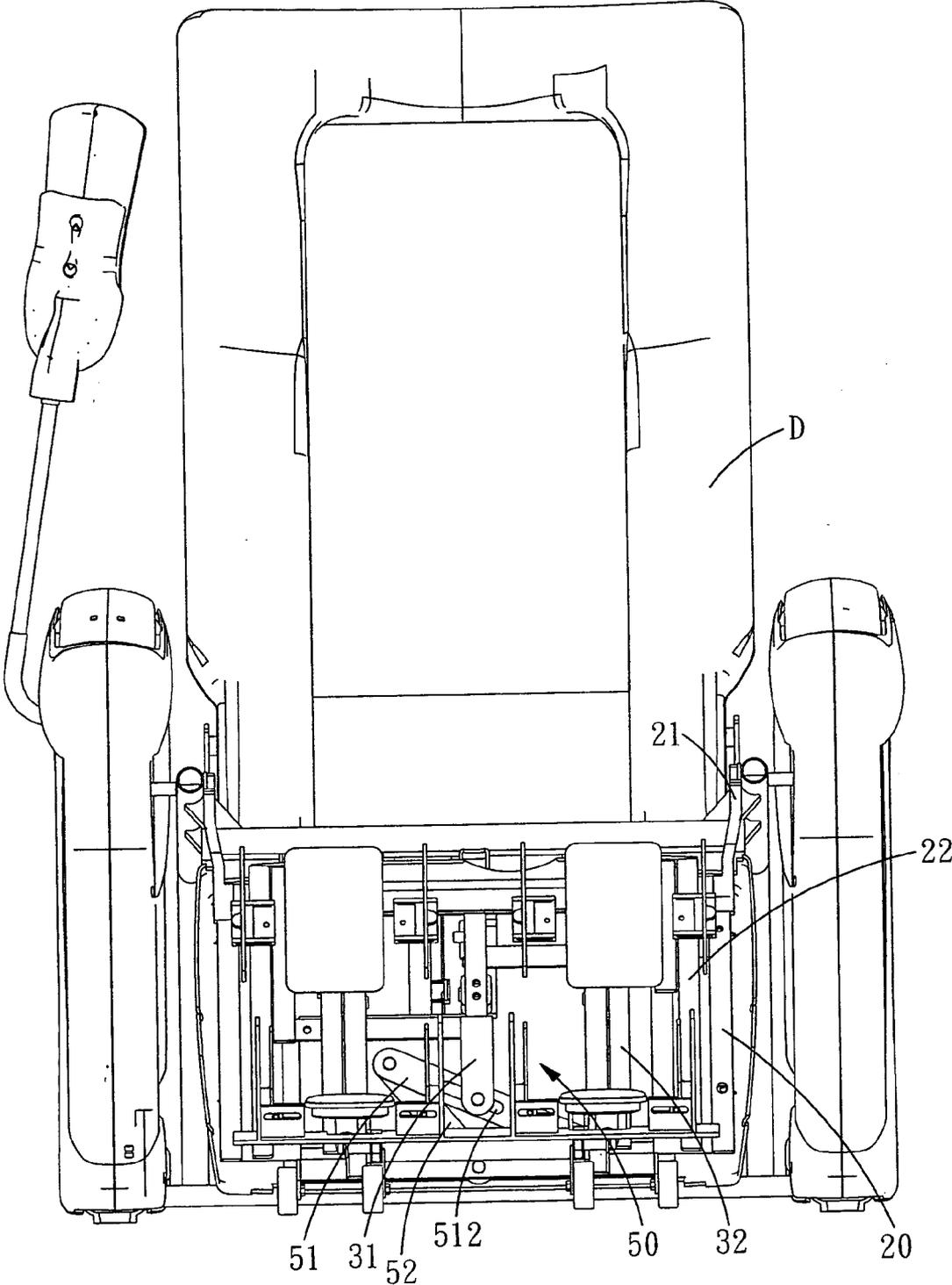


FIG. 7

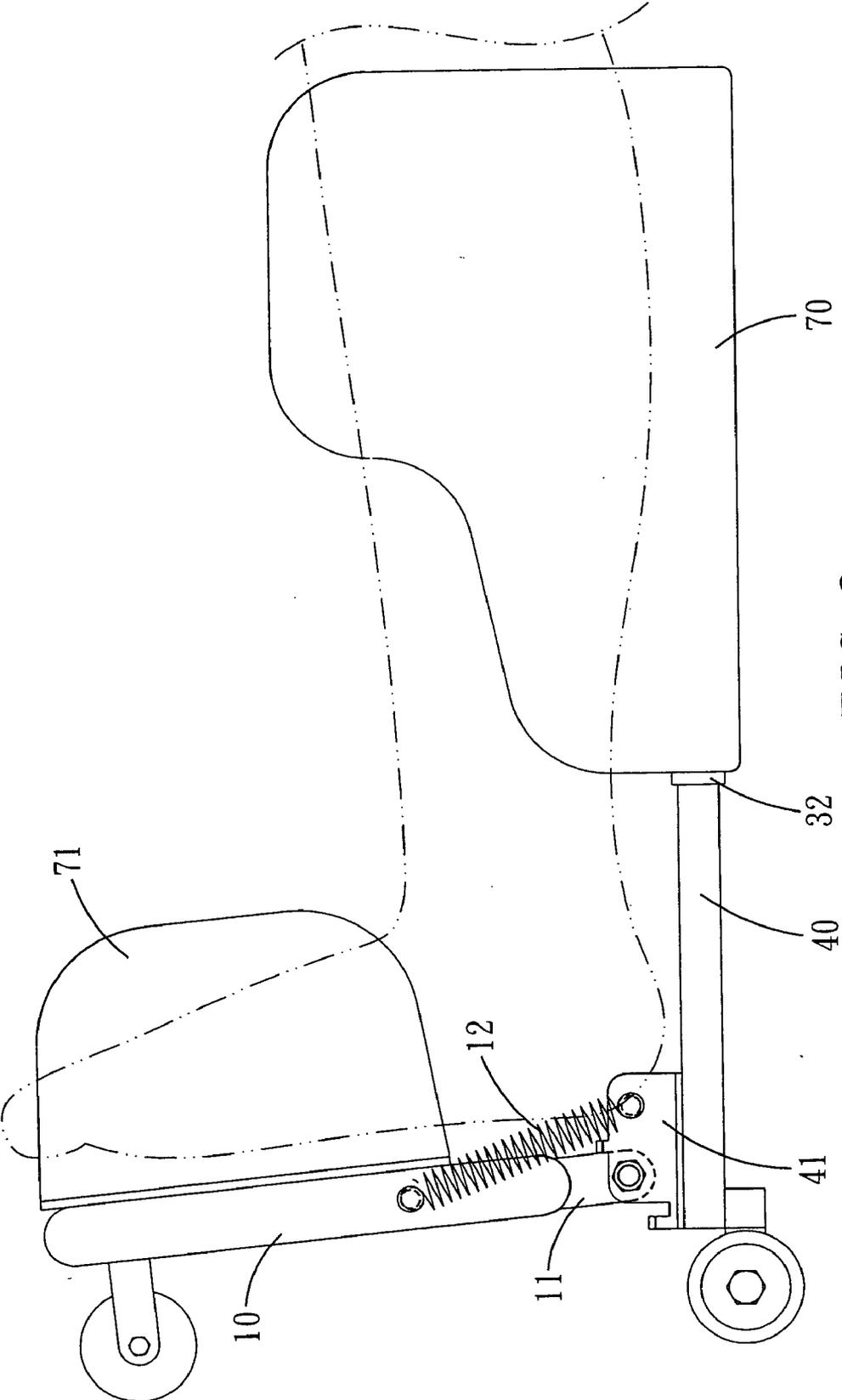


FIG. 8

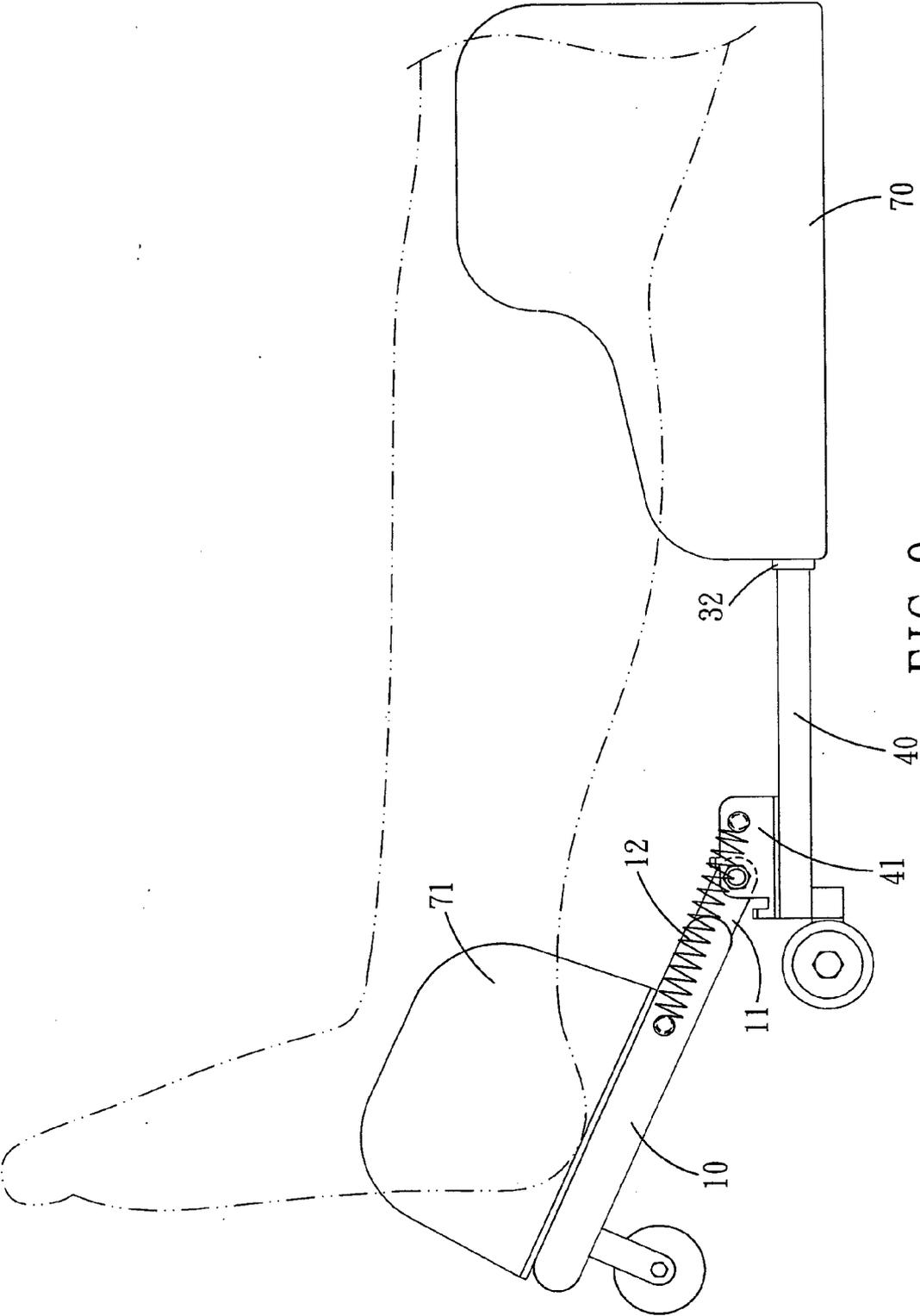


FIG. 9

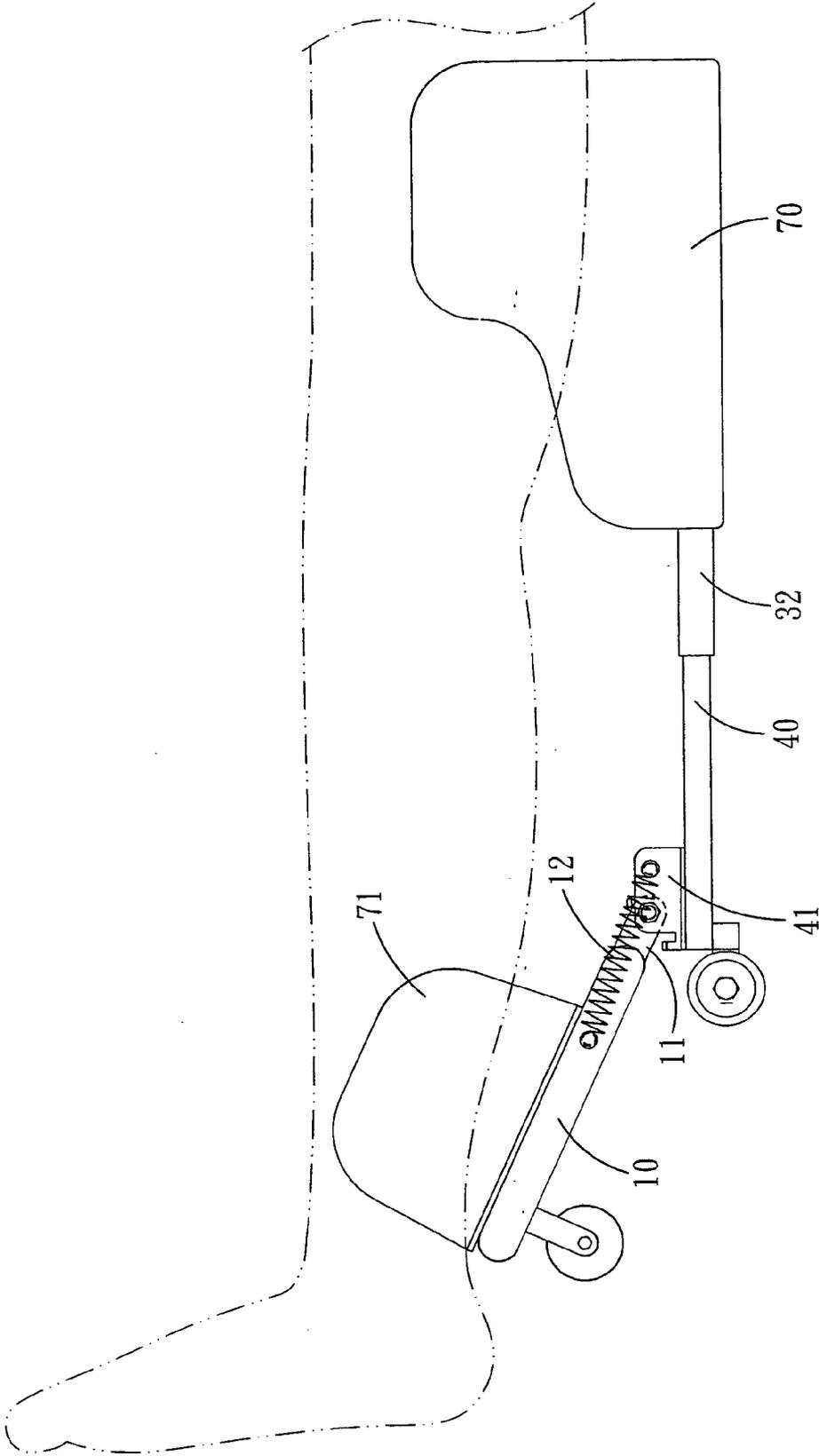


FIG. 10

FOOTREST ASSEMBLY FOR A MASSAGE CHAIR

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a massage chair, and more particularly to a footrest assembly for a massage chair.

[0003] 2. Description of the Prior Art

[0004] There are many advanced massage chairs with stretchable footrest available on the market, and most of which are provided with a footrest that is connected pivotally to the front end thereof, on the footrest are disposed in sequence a plurality of diamond-shaped connecting rods that are used to drive a plurality of massage cushion. However, these conventional massage chairs are structurally complicated and high cost. Besides, the existing massage chairs are normally provided with a footrest for supporting the heel, but the existing footrests are mostly L-shaped and unadjustable.

[0005] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages.

SUMMARY OF THE INVENTION

[0006] The primary objective of the present invention is to provide a low-cost and simple structured footrest assembly for a massage chair, wherein the pivotal seat, the connecting seat and the stretchable rack are slideably connected to one another, a motor assembly is mounted on the pivotal seat for controlling the motion of the connecting seat, the connecting rod assembly is disposed between the stretchable rack and the pivotal seat, the connecting seat drives the connecting rod assembly to move and then the connecting rod assembly moves the stretchable rack.

[0007] The secondary objective of the present invention is to provide footrest assembly for a massage chair that can be adjusted easily to massage different portions of the user's lower limbs, wherein the stretchable rack is provided with a plurality of mounting members through which the stretchable rack is pivoted to the footrest rack, and between the stretchable rack and the footrest rack is arranged a spring. The mounting members each is defined with a positioning device through which the footrest rack is positioned.

[0008] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings, which show, for purpose of illustrations only, the preferred embodiments in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a perspective view of a footrest assembly for a massage chair in accordance with the present invention;

[0010] FIG. 2 is an exploded view of a part of the footrest assembly for a massage chair in accordance with the present invention;

[0011] FIG. 3 is an assembly view of the footrest assembly for a massage chair in accordance with the present invention (the footrest assembly is stretching out);

[0012] FIG. 4 is a top view of the footrest assembly for a massage chair in accordance with the present invention (the footrest assembly withdraws);

[0013] FIG. 5 is another top view of the footrest assembly for a massage chair in accordance with the present invention (the footrest assembly is stretching out);

[0014] FIG. 6 is an illustrative view of the footrest assembly for a massage chair in accordance with the present invention (the footrest assembly withdraws);

[0015] FIG. 7 is front view of the footrest assembly for a massage chair in accordance with the present invention;

[0016] FIG. 8 shows that the footrest rack is adjusted to a vertical position;

[0017] FIG. 9 shows that the footrest rack is withdrawn;

[0018] FIG. 10 shows that the footrest rack is stretching out.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] Referring to FIGS. 1-6, a footrest assembly for a massage chair D in accordance with the present invention comprises a footrest rack 10, a pivotal seat 20, a connecting seat 30, a stretchable rack 40, a connecting rod assembly 50 and a motor assembly 60. The footrest rack 10 is disposed in the stretchable rack 40.

[0020] The pivotal seat 20 has two opposite pivotal portions 21 pivotally connected to the front end of the massage chair and has a first rail 22 arranged in a direction of the leg of the user. Beneath the pivotal seat 20 is a bolt mounting member 23. The pivotal seat 20 is provided with a pivotal member 24 that is located in a stretching direction of the massage chair. At the center of the pivotal seat 20 is arranged a screw shaft 25, and both ends of the screw shaft 25 are mounted to the bolt mounting member 23. A drive block 26 is formed with inner threads and is screwed on the screw shaft 25.

[0021] The connecting seat 30 is slideably mounted on the first rail 22, at the center of the connector seat 30 is arranged a push rod 31 that has a lateral shaft 311 arranged at the front end thereof, and the connecting seat 30 is provided with a second rail 32 that is located in a direction of the user's leg. The connecting seat 30 is connected to an end of the drive block 26 of the pivotal seat 20.

[0022] The stretchable rack 40 is slideably mounted on the second rail 32 of the connecting seat 30, and on the stretchable rack 40 are mounted massaging device (not shown). At the front end of the stretchable rack 40 are arranged two opposite mounting members 41 each of which is defined with a pivotal hole 411. At either side of the pivotal hole 411 are formed a first positioning protrusion 412 and a second positioning protrusion 413 that form an angle relative to the respective mounting members 41, and adjacent to the first positioning protrusion 412 is arranged a first spring-mounting member 414.

[0023] The footrest rack 10 is provided at an end thereof with two pivotal arms 11 each having a pivotal hole 111 through which a fastener 13 pivotally secures the pivotal arms 11 to the pivotal hole 411 of the mounting members 41 of the stretchable rack 40. The pivotal arms 11 are confined

in the space between the first positioning protrusion **412** and the second positioning protrusion **413** of the mounting members **41**. The pivotal arms **11** are provided with a second spring-mounting member **112**. Between the first spring-mounting member **414** of the stretchable rack **40** and the second spring-mounting member **112** of the footrest rack **10** is biased a spring **12**.

[0024] The connecting rod assembly **50** comprises a pin **53**, and a driven rod **51** pivotally connected with a leading rod **52**. An end **521** of the leading rod **52** is pivoted to the front end of the stretchable rack **40**, and another end **511** of the driven rod **51** is pivoted to the pivotal member **24** of the pivotal seat **20**. On the driven rod **51** is formed a slot **512** for insertion of the lateral shaft **311** of the push rod **31** of the pivotal seat **30**.

[0025] The motor assembly **60** comprises a motor **61** and a gear set **62** and is mounted on a massage chair. The motor assembly **60** drives the gear set **62** to move, and the screw shaft **25** serves to move the drive block **26**.

[0026] A plurality of massage members **70** are mounted on the footrest rack **10** and the stretchable rack **40** for massaging the user's lower limbs.

[0027] For a better understanding of the present invention, its operation and function, references should be made particularly to FIGS. **4** and **5**, wherein the footrest is mounted to the front end of the massage chair **D**, the user should control the feed amount of the motor assembly **60** according to needs. Due to the motor assembly **60** is mounted to the massage chair, the gear set **62** is rotated by the motor **61**, and the rotation of the gear set **62** will be transmitted to the drive block **26** of the pivotal seat **20**, plus the connecting seat **30** is connected to the drive block **26** of the pivotal seat **20**, the connecting **30** will be moved together with the driven block **26** by the rotation of the screw shaft **25**.

[0028] In this situation, the connecting seat **30** will slide outward along the first rail **22** of the pivotal seat **20**, and the push rod **31** and the lateral shaft **311** thereof will move synchronously with the connecting seat **30**. Due to the lateral shaft **311** is confined in the slot **512** of the driven rod **51**, the driven rod **51** will swing under the effect of the lateral shaft **311** and the pivotal member **24** of the pivotal seat **20**, and the leading rod **52** will swing synchronously with the driven rod **51**. By such arrangements, the movement of the lateral shaft **311** will effect a stretch or withdrawal of the connecting rod assembly **50**.

[0029] When the connecting rod assembly **50** stretches out, the leading rod **52** will make the stretchable rack **40** stretch out synchronously with the connecting rod assembly **50**, and the stretchable rack **40** will move stably under the help of the second rail **32** of the connecting seat **30**.

[0030] By controlling the feed amount of the motor assembly **60**, a small travel distance of the screw shaft **25** can be amplified and turned into a large travel of the connecting rod assembly **50**, therefore, the footrest of the present invention is space saving and easily operated, as shown in FIGS. **6** and **7**.

[0031] On the other hand, the first rail **22** is arranged on the pivotal seat **20** and located in a direction of the leg of the user, and the connecting seat **30** is slideably received in the first rail **22**, plus the connecting seat **30** is also provided with

a second rail **32** located in a direction of the user's leg, and the stretchable rack **40** is moveably received in the second rail **32** of the connecting seat **30**. Therefore, the pivotal seat **20**, the connecting seat **30** and the stretchable rack **40** can move stably under the guidance of the first and second rails **22** and **32**.

[0032] It will be noted that the aforementioned particular functions of the present invention are achieved by the combination of the two following structures:

[0033] 1. a small travel distance of the screw shaft **25** can be amplified and turned into a large travel of the connecting rod assembly **50**.

[0034] 2. under the guidance of the first and second rails **22** and **32**, the pivotal seat **20**, the connecting seat **30** and the stretchable rack **40** move stably.

[0035] Therefore, it should be clear that any further embodiments may be made without departing from the scope of the present invention, such as the technology of arranging different massage devices on the stretchable rack **40**.

[0036] Referring to FIGS. **2** and **8-10**, the footrest rack **10** is provided at an end thereof with two pivotal arms **11** that are secured to the pivotal hole **411** of the mounting members **41** of the stretchable rack **40**. The pivotal arms **11** are confined in the space between the first positioning protrusion **412** and the second positioning protrusion **413** of the mounting members **41**.

[0037] When the stretchable rack **40** stretches out, the footrest rack **10** will rotate to a position perpendicular to the stretchable rack **40** under the effect of the spring **12**, so that the user's feet can be massaged by the massage members **70** on the footrest rack **10**, and the massage members **70** on the stretchable rack **40** can massage the user's legs.

[0038] When the stretchable rack **40** withdraws, the footrest rack **10** will be stopped by the user's feet, at this moment, the user doesn't need to move his feet since the springs **12** will make the pivotal arms **11** of the footrest rack **10** rotate upward to the horizontal position, so that the user's ankle can be massaged by the massage members **70** on the footrest rack **10**.

[0039] By changing the travel length of the stretchable rack **40**, the massage members **70** on the footrest rack **10** and the stretchable rack **40** can be adjusted to massage different portions of the user's lower limbs.

[0040] With the pivotal arms **11** and the springs **12**, the footrest rack **10** can be adjusted automatically to massage different portions of the user's lower limbs without moving the user's lower limbs, therefore, the present invention really provides an improved massage effect.

[0041] While we have shown and described various embodiments in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

What is claimed is:

1. A footrest assembly for a massage chair comprising a pivotal seat, a connecting seat, a stretchable rack, a connecting rod assembly and a motor assembly;

wherein a screw shaft is mounted on the connecting seat, and a drive block is screwed on the screw shaft;

a first rail is mounted between the pivotal seat and the connecting seat;

a second rail is mounted between the connecting seat and the stretchable rack;

the connecting rod assembly is disposed between the pivotal seat and the stretchable rack, and the drive block drives the connecting rod assembly to move forward or backward;

the motor assembly comprises a motor and a gear set and serves to rotate the screw shaft.

2. The footrest assembly for a massage chair as claimed in claim 1, wherein the stretchable rack and a footrest rack are disposed at a front end of a massage chair;

at a front end of the stretchable rack are arranged a plurality of mounting members each of which is defined with a pivotal hole;

the footrest rack is provided with a plurality of pivotal arms that are pivoted to the pivotal hole of the mounting members of the stretchable rack, and a swing angle of the respective pivotal arms is limited by the mounting members; and

a spring is arranged between the stretchable rack and the footrest rack.

3. The footrest assembly for a massage chair as claimed in claim 2, wherein a plurality of massage members are mounted on the footrest rack and the stretchable rack for massaging the user's lower limbs.

4. The footrest assembly for a massage chair as claimed in claim 2, wherein the stretchable rack is provided at a front end thereof with two opposite mounting members each of which is defined with the pivotal hole, at either side of the pivotal hole are formed a first positioning protrusion and a second positioning protrusion that form an angle relative to the respective mounting members, and adjacent to the first positioning protrusion is arranged a first spring-mounting member;

the footrest rack is provided at an end thereof with two pivotal arms that are pivoted to the pivotal hole of the mounting members of the stretchable rack, and the pivotal arms are confined between the first positioning protrusion and the second positioning protrusion of the mounting members, the pivotal arms are provided with a second spring-mounting member;

the spring is arranged between the first spring-mounting member and the second spring-mounting member; and

the plurality of massage members are mounted on the footrest rack and the stretchable rack for massaging the user's lower limbs.

5. The footrest assembly for a massage chair as claimed in claim 1, wherein the pivotal seat is pivotally connected to the front end of a massage chair and the first rail is arranged in a direction of the leg of the user, the pivotal seat is provided with a pivotal member that is located in a stretch-

ing direction of the massage chair, at a center of the pivotal seat is arranged a screw shaft, and both ends of the screw shaft are mounted to a bolt mounting member beneath the pivotal seat, the drive block is screwed on the screw shaft;

the connecting seat is slideably mounted on the first rail, at a center of the connector seat is arranged a push rod, and the connecting seat is provided with a second rail that is located in a direction of the user's legs, the connecting seat is connected to an end of the drive block of the pivotal seat;

the stretchable rack is slideably mounted on the second rail of the connecting seat, and on the stretchable rack are mounted massaging devices; and

the connecting rod assembly comprises a driven rod and a leading rod, the leading rod is pivoted to the pivotal member of the pivotal seat, and on the driven rod is formed a slot for insertion of the push rod.

6. The footrest assembly for a massage chair as claimed in claim 2, wherein the pivotal seat is pivotally connected to the front end of a massage chair and the first rail is arranged in a direction of the leg of the user, the pivotal seat is provided with a pivotal member that is located in a stretching direction of the massage chair, at a center of the pivotal seat is arranged a screw shaft, and both ends of the screw shaft are mounted to a bolt mounting member beneath the pivotal seat, the drive block is screwed on the screw shaft;

the connecting seat is slideably mounted on the first rail, at a center of the connector seat is arranged a push rod, and the connecting seat is provided with a second rail that is located in a direction of the user's legs, the connecting seat is connected to an end of the drive block of the pivotal seat;

the stretchable rack is slideably mounted on the second rail of the connecting seat, and on the stretchable rack are mounted massaging devices; and

the connecting rod assembly comprises a driven rod and a leading rod, the leading rod is pivoted to the pivotal member of the pivotal seat, and on the driven rod is formed a slot for insertion of the push rod.

7. The footrest assembly for a massage chair as claimed in claim 3, wherein the pivotal seat is pivotally connected to the front end of a massage chair and the first rail is arranged in a direction of the leg of the user, the pivotal seat is provided with a pivotal member that is located in a stretching direction of the massage chair, at a center of the pivotal seat is arranged a screw shaft, and both ends of the screw shaft are mounted to a bolt mounting member beneath the pivotal seat, the drive block is screwed on the screw shaft;

the connecting seat is slideably mounted on the first rail, at a center of the connector seat is arranged a push rod, and the connecting seat is provided with a second rail that is located in a direction of the user's legs, the connecting seat is connected to an end of the drive block of the pivotal seat;

the stretchable rack is slideably mounted on the second rail of the connecting seat, and on the stretchable rack are mounted massaging devices; and

the connecting rod assembly comprises a driven rod and a leading rod, the leading rod is pivoted to the pivotal member of the pivotal seat, and on the driven rod is formed a slot for insertion of the push rod.

8. The footrest assembly for a massage chair as claimed in claim 4, wherein the pivotal seat is pivotally connected to the front end of a massage chair and the first rail is arranged in a direction of the leg of the user, the pivotal seat is provided with a pivotal member that is located in a stretching direction of the massage chair, at a center of the pivotal seat is arranged a screw shaft, and both ends of the screw shaft are mounted to a bolt mounting member beneath the pivotal seat, the drive block is screwed on the screw shaft;

the connecting seat is slideably mounted on the first rail, at a center of the connector seat is arranged a push rod, and the connecting seat is provided with a second rail that is located in a direction of the user's legs, the connecting seat is connected to an end of the drive block of the pivotal seat;

the stretchable rack is slideably mounted on the second rail of the connecting seat, and on the stretchable rack are mounted massaging devices; and

the connecting rod assembly comprises a driven rod and a leading rod, the leading rod is pivoted to the pivotal

member of the pivotal seat, and on the driven rod is formed a slot for insertion of the push rod.

9. The footrest assembly for a massage chair as claimed in claim 5, wherein the connecting seat comprise a lateral shaft arranged at the front end thereof, and on the driven rod of the connecting rod assembly is formed the slot for insertion of the lateral shaft.

10. The footrest assembly for a massage chair as claimed in claim 6, wherein the connecting seat comprise a lateral shaft arranged at the front end thereof, and on the driven rod of the connecting rod assembly is formed the slot for insertion of the lateral shaft.

11. The footrest assembly for a massage chair as claimed in claim 7, wherein the connecting seat comprise a lateral shaft arranged at the front end thereof, and on the driven rod of the connecting rod assembly is formed the slot for insertion of the lateral shaft.

12. The footrest assembly for a massage chair as claimed in claim 8, wherein the connecting seat comprise a lateral shaft arranged at the front end thereof, and on the driven rod of the connecting rod assembly is formed the slot for insertion of the lateral shaft.

* * * * *