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(54) **SQUAT RACK**

KNIEBEUGEGESTELL

SUPPORT DE SQUAT

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EP 3 202 466 B1

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Description

BACKGROUND OF INVENTION

1. FIELD OF INVENTION

[0001] The present invention relates to an exercise machine and, more particularly, to a squat rack.

2. RELATED PRIOR ART

[0002] Document US 5 370 594 A discloses a conventional exercise machine comprising a frame, two treads connected to and located on two sides of the frame, a lifting unit pivotally connected to the frame, a pulling unit comprising a middle portion pivotally connected to a front end of the frame and a connector for pivotally connecting a lower end of the pulling unit to the lifting unit. In a first use, the user sits astride on the seat of the lifting unit of the machine with the feet on the treads and pulls with the arms and pushes with the feet. In a second use, the handle of the pulling unit may be rotated against the seat. The user stands at the rear facing forward with the hands upon a transverse handle bar and pushes the handle downward against the counterforce thus promoting exercise. In a third exercise the user sits on the floor behind the machine with the handle bar also collapsed against the seat. The feet are placed against the rear of the foot rests with the heels on the floor and the hands grasp the transverse handle and pull the bar downward. Therefore, different muscles can be exercised.

[0003] Document US 5 643 147 A discloses another conventional multipurpose exercise machine comprising a frame, a tread unit having two treads, a lifting unit pivotally connected to the frame, a pulling unit comprising a middle portion pivotally connected to a front end of the frame and a connector structure for pivotally connecting a lower end of the pulling unit to the lifting unit. The lifting unit is further interconnected with the frame by an air cylinder set by means of which the exercise machine is capable of making use of the weight of the user for providing a damping effect. The two treads are pedals which are pivotally suspended on the frame. The user can either perform a pushing exercise and a lifting exercise, wherein a handle of the pulling unit and the seat are synchronously raised, or a horse-riding exercise, in which a user seated on the seat pushes the pedals forward with his/ her feet and simultaneously moves the pulling unit downwards. Thereby the seat tube comes upward.

To squat, a person has to use his or her upper legs, abdomen and lower back. Hence, a person can squat to exercise muscles in his or her torso, waist, abdomen, hips and upper legs. However, a person can exert too much stress in his or her knees or upper legs and hence excessively wear the knees or pull the muscles in the upper legs.

[0004] Taiwanese Patent Publication No. 313866 discloses a conventional squat rack for helping a user squat. The conventional squat rack includes a lower tube 1 connected to a upper tube 2, a seat tube 10 pivotally connected to the upper tube 2, a leg tube 20 pivotally connected to the upper tube 2, a handle 30 pivotally connected to the upper tube 2, a connector 4 for connecting the seat tube 10 to the leg tube 20, and a connector 40 for connecting the seat tube 10 to the handle 30. Thus, the leg tube 20 is pivoted together with the handle 30. Hence, the user's hands, torso and legs move together with the conventional squat rack. Hence, the user's muscles in the waist and upper legs are only subject to light loads. That is, the user does not exercise the waist and upper legs sufficiently. The conventional squat rack is not effective in helping the user to exercise the waist and upper legs.

[0005] The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

SUMMARY OF INVENTION

[0006] It is an objective of the present invention to provide a simple and inexpensive squat rack squat rack for helping a user squat.

[0007] It is another objective of the present invention to provide a squat rack with which a user exercises without exerting excessive stress in his or her muscles.

[0008] To achieve the foregoing objectives, the squat rack includes a frame, a tread unit, a lifting unit, a pulling unit and a connector. The tread unit includes two treads connected to and located on two sides of the frame for supporting a user's feet so that the frame is firmly kept on the ground by the user. The lifting unit is pivotally connected to the frame and located behind the user in operation. The pulling unit includes a middle portion pivotally connected to a front end of the frame. The connector pivotally connects a lower end of the pulling unit to the lifting unit so that the user can pull the pulling unit to cause the lifting unit to support the user's hips via the connector.

[0009] Other objectives, advantages and features of the present invention will be apparent from the following description referring to the attached drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0010] The present invention will be described via detailed illustration of two embodiments referring to the drawings wherein:

FIG. 1 is a perspective view of a squat rack for helping a user squat according to the first embodiment of the present invention;

FIG. 2 is an exploded view of the squat rack shown in FIG. 1;

FIG. 3 is a right side view of the squat rack shown in FIG. 1;

FIG. 4 is a right side view of a user using the squat

rack shown in FIG. 3;
FIG. 5 is a right side view of the user and the squat rack in another position than shown in FIG. 4;
FIG. 6 is a right side view of the user and the squat rack in another position than shown in FIG. 5;
FIG. 7 is a right side view of the squat rack shown in FIG. 1 in a adjustment operation;
FIG. 8 is a right side view of the squat rack in a collapsed position other than the extended position shown in FIG. 3;
FIG. 9 is an exploded view of a squat rack for helping a user squat according to the second embodiment of the present invention;
FIG. 10 is a right side view of a user using the squat rack shown in FIG. 9; and
FIG. 11 is a right side view of the user and the squat rack in another position than shown in FIG. 10.

DETAILED DESCRIPTION OF EMBODIMENTS

[0011] Referring to FIGS. 1 through 3, a squat rack includes a frame 10, a lifting unit 20 and a pulling unit 30 according to a first embodiment of the present invention. The frame 10 includes an upper tube 11 and a lower tube 12. The upper tube 11 includes a crossbar 111 at a lower end. A middle portion of the upper tube 11 is pivotally connected an upper end of the lower tube 12 by a pivotal joint 13. The lower tube 12 includes a crossbar 121 at a lower end. The pivotal joint 13 includes two lugs (not numbered) connected to the upper end of the lower tube 12 by welding for example, an axle 131 inserted in the upper tube 11, and a pin 132 selectively inserted in the upper tube 11. When the lower tube 12 is opened relative to the upper tube 11, the pin 132 is inserted in the lugs of the pivotal joint 13 and the upper tube 11, to keep the lower tube 12 in position relative to the upper tube 11. Referring to FIG. 8, the pin 132 is selectively pulled from the upper tube 11 to allow pivoting of the lower tube 12 relative to the upper tube 11.

[0012] The lifting unit 20 is pivotally connected to the upper tube 11 of the frame 10. The lifting unit 20 includes a seat tube 21, a seat 22 and a strut 25. A front, lower end of the seat tube 21 is pivotally connected to a middle portion of the upper tube 11. The seat 22 is supported on the seat tube 21. The seat 22 is elongated element on which a user can move to and fro. The position of the seat 22 on the seat tube 21 is preferably adjustable. A rear, upper end of the strut 25 is pivotally connected to a rear, upper end of the seat tube 21. A front, lower end of the strut 25 is pivotally connected to the upper tube 11 the frame 10 via a pivotal joint 26. The pivotal joint 26 includes a plurality of apertures 27 arranged about a pivotal center. Referring to FIG. 7, a pin 28 is inserted in a selected one of the apertures 27 to locate the strut 25 at a selected one of several angles relative to the upper tube 11, thus adjusting the elevation of the seat tube 21 on the strut 25.

[0013] The pulling unit 30 is pivotally connected the upper tube 11 of the frame 10. The pulling unit 30 includes a lever 31, an extensive element 310, a fastener 33 and a handle 32. A middle portion of the lever 31 is pivotally connected to the front, upper end of the upper tube 11. The extensive element 310 is telescopically connected to the lever 31. The handle 32 is connected to a front, upper end of the extensive element 310. The extensive element 310 includes apertures 311. The fastener 33 is inserted in a selected one of the apertures 311 to adjust the entire length of the combination of the extensive element 310 with the lever 31, i.e., the stroke of the pivotal movement of the handle 32 on the lever 31.

[0014] The pulling unit 30 is operatively connected to the lifting unit 20. A rear, lower end of the lever 31 is connected to a middle portion of the seat tube 21 via a connector 35. Thus, the user exerts a lifting force on the seat tube 21 when he or she exerts a pulling force on the lever 31. In a process of standing up, the pulling force facilitates backward and upward movement of the handle 32 to help his or her legs to sand up. In a process of squatting, the pulling force slows rearward and downward movement of the seat tube 21 to help his or her legs squat. There is a adjustment unit 36 between the lever 31 and the connector 35.

[0015] The adjustment unit 36 includes apertures 38 in the lever 31 and apertures 37 in the connector 35. Referring to FIG. 7, a pin 39 is inserted in a selected one of the apertures 38 and a selected one of the apertures 37 to adjust the tilt of the lever 31 to adjust a stroke of movement of the lifting unit 20 relative to the pulling unit 30.

[0016] The apertures 38 are used to adjust the mechanical effect of the leverage of the lever 31 and hence the pulling force required to help the user stand up and squat. For example, referring to FIG. 8, the pin 39 can be inserted in one of the apertures closer to the handle 32 to use his or her hands to provide more support to his or her legs.

[0017] The pin 39 can be pulled out of the apertures 37 and 38 to allow the lever 31 to collapse relative to the upper tube 11.

[0018] There can be a plurality of apertures 37 and only one aperture 38 in an alternative embodiment. There can be only one aperture 37 and a plurality of apertures 38 in an alternative embodiment.

[0019] The tread unit 15 is securely connected to the frame 10. The user can set his or her feet on the tread unit 15 to use his or her own weight to keep the frame 10 still on the ground while using the squat rack. The tread unit 15 includes two treads 151 and 152 connected to two ends of the crossbar 121, which is connected to the front, lower end of the lower tube 12. In a horizontal sense, the tread unit 15 is located between the point of connection of the seat tube 21 with the upper tube 11 and the point of connection of the lever 31 with the upper tube 11, thus enabling the user to completely stretch his or her legs while standing up.

[0020] Referring to FIG. 4, in use, the user sets his or

her feet on the treads 151 and 152 of the tread unit 1, and holds the handle 32 of the pulling unit 30 with his or her hands. Then, the user pulls the lever 31 of the pulling unit 30 towards his or her chest and lifts the seat tube 21 of the lifting unit 20 towards his or her hips via the connector 35, thus helping the user stand up.

[0021] Then, referring to FIG. 5, the user bends his or her knees and lowers the hips. That is, the user is in a half-stand-half-squat position. The lifting unit 20 supports the hips since the user holds the handle 32 of the pulling unit 30, and the lever 31 is connected to the seat tube 21 via the connector 35. The user can further bend his or her knees and lowers the hips without much difficult because the hips and hence the legs are supported by the seat 22 that is lifted by the hands via the connector 35.

[0022] The steps shown in FIGS. 4 and 5 can be repeated to enable the user to squat and stand repeatedly. Hence, the user can be used to exercise and train his or her muscles.

[0023] Referring to FIG. 6, the angle of the strut 25 of the lifting unit 20 is changed to change the elevation of the seat tube 21 to increase the extent to which the user squat. The adjustment unit 36 of the lever 31 of the pulling unit 30 is inserted in a selected one of the aperture 37 of the connector 35 to locate the lever 31 at a desired angle corresponding to the length of the user's arms. Thus, the user can squat lower.

[0024] Referring to FIGS. 9 through 11, there is a squat rack according to a second embodiment of the present invention. The second embodiment is like the first embodiment except for including a telescopic element 23 between the point of connection of the seat tube 21 of the lifting unit 20 to the upper tube 11 and the crossbar 111. There is at least one elastic element 40 between the extensive element 23 and the frame 10 so that the seat tube 21 of the lifting unit 20 tends to be raised as shown in FIG 10. The elastic element 40 can be a spring, an elastic strip, or a hydraulic or pneumatic cylinder.

[0025] Referring to FIG. 10, in use the user sets his or her feet on the treads 151 and 152 of the tread unit 15 and holds the handle 32 of the pulling unit 30 with hands. The elastic element 40 pulls the extensive element 23 backwards. The extensive element 23 lifts the seat tube 21 of the lifting unit 20 to the user's hips. The seat tube 21 of the lifting unit 20 is connected to the lever 31 of the pulling unit 30 via the connector 35. Hence, the lever 31 of the pulling unit 30 moves towards the chest of the user to keep the user stand up because.

[0026] Then, referring to FIG. 11, to squat, the user holds the handle 32 of the pulling unit 30 by the hands. Since the connector 35 is arranged between the lever 31 and the seat tube 21, the lifting unit 20 supports the user by the hips. The extensive element 23 of the seat tube 21 extends and hence loads the elastic element. The elastic element 40 pulls back and moves the seat tube 21 of the lifting unit 20 to the user's hips when the user stands up again. Hence, the seat 22 of the seat tube 21 supports the user by the hips.

[0027] The present invention has been described via the detailed illustration of the embodiments. Those skilled in the art can derive variations from the embodiments without departing from the scope of the present invention. Therefore, the embodiments shall not limit the scope of the present invention defined in the claims.

Claims

1. A squat rack comprising:

a frame (10) comprising an upper tube (11) and a lower tube (12) pivotally connected to the upper tube (11);
a tread unit (15) comprising two treads (151, 152) connected to and located on two sides of the frame (10),
a lifting unit (20) pivotally connected to the frame (10), wherein the lifting unit (20) is located behind the user in operation, wherein the lifting unit (20) comprises a seat tube (21), a seat (22) and a strut (25);
a pulling unit (30) comprising a middle portion pivotally connected to a front end of the frame (10); and
a connector (35), which pivotally connects a lower end of the pulling unit (30) to the lifting unit (20), so that when the user pulls the pulling unit (30), a lifting force is exerted on the seat tube (21) of the lifting unit (20) via the connector (35) to support the user's hips,
characterized in that the tread unit (15) is configured for supporting a user's feet so that the frame (10) is firmly kept on the ground by the user's own weight during use of the squat rack; and **in that**
the strut (25) comprises a rear, upper end for releasably supporting the seat tube (21), when the seat tube (21) is in its lowest position, wherein the lifting unit (20) further comprises a joint (26) for pivotally connecting a front, lower end of the strut (25) to the upper tube (11), wherein the joint (26) serves for locating the strut (25) at a selected one of several angles relative to the upper tube (11) for adjusting an elevation of the seat tube (21) on the strut (25).

2. The squat rack according to claim 1, wherein each of the upper and lower tubes (11, 12) comprises a crossbar (111, 121) connected to a lower end.

3. The squat rack according to claim 2, wherein the treads (151, 152) of the tread unit (15) connected to two ends of the crossbar (121) of the lower tube (12).

4. The squat rack according to claim 1, wherein the seat tube (21) is pivotally connected to the upper

tube (11), wherein a seat (22) is supported on the seat tube (21).

5. The squat rack according to claim 1, wherein the pulling unit (30) comprises a lever (31) formed with a middle portion pivotally connected to a front end of the upper tube (11) and a handle (32) connected to an upper end of the lever (31).

6. The squat rack according to claim 5, wherein the connector (35) comprises an end pivotally connected to a lower end of the lever (31) and another end pivotally connected to a middle portion of the seat tube (21).

7. The squat rack according to claim 1, wherein the frame (10) further comprises a pivotal joint (13) for pivotally connecting the lower tube (12) to the upper tube (11), wherein the pivotal joint (13) comprises an axle (131) inserted in the upper tube (11) and a pin (132) selectively inserted in the upper tube (11).

8. The squat rack according to claim 1, wherein the pivotal joint (26) includes apertures (27) arranged about a pivotal axis and a pin (28) inserted in a selected one of the apertures (27).

9. The squat rack according to claim 1, wherein the pulling unit (30) comprises:

an extensive element (310) comprising an end connected to the handle (32), another end telescopically connected to the lever (31), and apertures (311) between the ends; and
a fastener (33) inserted in the lever (31) and a selected one of the apertures (311) of the extensive element (310).

10. The squat rack according to claim 9, wherein the pulling unit (30) further comprises an adjustment unit (36) between the lever (31) and the connector (35).

11. The squat rack according to claim 10, wherein the adjustment unit (36) comprises apertures (37, 38) in one of the lever (31) and the connector (3 5) and a pin (39) inserted in the other one of the lever (31) and the connector (35) and a selected one of the apertures (37, 38).

12. The squat rack according to claim 1, wherein the treads (151, 152) of the tread unit (15) are located between the point of connection of the lifting unit (20) to the frame (10) and the point of connection of the pulling unit (30) to the frame (10) to increase stability of the frame (10) to facilitate a user to stand still.

13. The squat rack according to claim 1, further comprising an elastic element (40) between the lifting unit (20) and the frame (10) to facilitate the lifting unit (20) to rise.

Patentansprüche

1. Kniebeugegestell, umfassend:

einen Rahmen (10), der ein oberes Rohr (11) und ein unteres Rohr (12) umfasst, das drehbar mit dem oberen Rohr (11) verbunden ist,
eine Trittflächeneinheit (15), die zwei Trittflächen (151, 152) umfasst, die mit zwei Seiten des Rahmens (10) verbunden sind und daran angeordnet sind,
eine Hebeeinheit (20), die drehbar mit dem Rahmen (10) verbunden ist, wobei die Hebeeinheit (20) beim Betrieb hinter dem Benutzer angeordnet ist, wobei die Hebeeinheit (20) ein Sitzrohr (21), einen Sitz (22) und eine Strebe (25) umfasst,
eine Zieheinheit (30), die einen Mittelabschnitt umfasst, der drehbar mit einem vorderen Ende des Rahmens (10) verbunden ist, und
einen Verbinder (35), der ein unteres Ende der Zieheinheit (30) drehbar mit der Hebeeinheit (20) verbindet, so dass, wenn der Benutzer die Zieheinheit (30) zieht, über den Verbinder (35) eine Hubkraft auf das Sitzrohr (21) der Hebeeinheit (20) ausgeübt wird, um die Hüften des Benutzers zu stützen,
dadurch gekennzeichnet, dass
die Trittflächeneinheit (15) darauf ausgelegt ist, einen Fuß des Benutzers zu stützen, so dass der Rahmen (10) durch das Eigengewicht des Benutzers während des Gebrauchs des Kniebeugegestells fest auf dem Boden gehalten wird, und dass die Strebe (25) ein hinteres oberes Ende umfasst, um das Sitzrohr (21) lösbar zu stützen, wenn das Sitzrohr (21) an seiner niedrigsten Position ist, wobei die Hebeeinheit (20) ferner ein Gelenk (26) umfasst, um ein vorderes unteres Ende der Strebe (25) mit dem oberen Rohr (11) drehbar zu verbinden, wobei das Gelenk (26) dazu dient, die Strebe (25) an einem aus verschiedenen Winkeln ausgewählten Winkel relativ zu dem oberen Rohr (11) anzuordnen, um eine Erhöhung des Sitzrohrs (21) an der Strebe (25) einzustellen.

2. Kniebeugegestell gemäß Anspruch 1, bei welchem jedes der oberen und unteren Rohre (11, 12) eine Querstange (111, 121) umfasst, die mit einem unteren Ende verbunden ist.

3. Kniebeugegestell gemäß Anspruch 2, bei welchem die Trittflächen (151, 152) der Trittflächeneinheit (15) mit zwei Enden der Querstange (121) des unteren

Rohrs (12) verbunden sind.

4. Kniebeugegestell gemäß Anspruch 1, bei welchem das Sitzrohr (21) drehbar mit dem oberen Rohr (11) verbunden ist, wobei ein Sitz (22) an dem Sitzrohr (21) gelagert ist.

5. Kniebeugegestell gemäß Anspruch 1, bei welchem die Zieheinheit (30) einen Hebel (31), der mit einem Mittelabschnitt ausgebildet ist, der drehbar mit einem vorderen Ende des oberen Rohrs (11) verbunden ist, und einen Griff (32) umfasst, der mit einem oberen Ende des Hebels (31) verbunden ist.

6. Kniebeugegestell gemäß Anspruch 5, bei welchem der Verbinder (35) ein Ende, das drehbar mit einem unteren Ende des Hebels (31) verbunden ist, und ein anderes Ende umfasst, das drehbar mit einem Mittelabschnitt des Sitzrohrs (21) verbunden ist.

7. Kniebeugegestell gemäß Anspruch 1, bei welchem der Rahmen (10) ferner ein Gelenk (13) umfasst, um das untere Rohr (12) drehbar mit dem oberen Rohr (11) zu verbinden, wobei das Gelenk (13) eine Achse (131), die in das obere Rohr (11) gesteckt ist, und einen Stift (132) umfasst, der selektiv in das obere Rohr (11) eingefügt ist.

8. Kniebeugegestell gemäß Anspruch 1, bei welchem das Gelenk (26) Öffnungen (27) umfasst, die um eine Drehachse und einen Stift (28) angeordnet sind, der in eine Ausgewählte der Öffnungen (27) eingefügt ist.

9. Kniebeugegestell gemäß Anspruch 1, bei welchem die Zieheinheit (30) umfasst:

ein extensives Element (310), das ein Ende, das mit dem Griff (32) verbunden ist,
ein anderes Ende, das teleskopisch mit dem Hebel (31) verbunden ist, und Öffnungen (311) zwischen den Enden umfasst, und
ein Befestigungsmittel (33), das in den Hebel (31) und eine Ausgewählte der Öffnungen (311) des extensiven Elements (310) eingefügt ist.

10. Kniebeugegestell gemäß Anspruch 9, bei welchem die Zieheinheit (30) ferner eine Einstelleinheit (36) zwischen dem Hebel (31) und dem Verbinder (35) umfasst.

11. Kniebeugegestell gemäß Anspruch 10, bei welchem die Einstelleinheit (36) Öffnungen (37, 38) in einem der Hebel (31) und dem Verbinder (35) und einen Stift (39) umfasst, der in den anderen der Hebel (31) und den Verbinder (35) und eine Ausgewählte der Öffnungen (37, 38) gesteckt ist.

12. Kniebeugegestell gemäß Anspruch 1, bei welchem die Trittflächen (151, 152) der Trittflächeneinheit (15) zwischen dem Verbindungspunkt der Hebeeinheit (20) mit dem Rahmen (10) und dem Verbindungspunkt der Zieheinheit (30) mit dem Rahmen (10) angeordnet sind, um die Stabilität des Rahmens (10) zu erhöhen, um zu ermöglichen, dass ein Benutzer still steht.

13. Kniebeugegestell gemäß Anspruch 1, das ferner ein elastisches Element (40) zwischen der Hebeeinheit (20) und dem Rahmen (10) umfasst, um es der Hebeeinheit (20) zu erleichtern, sich zu heben.

Revendications

1. Support de squat comprenant:

un cadre (10) comprenant un tube supérieur (11) et un tube inférieur (12) connecté de manière pivotante au tube supérieur (11) ;
une unité de bandes de roulement (15) comprenant deux bandes de roulement (151, 152) connectées et situées sur deux côtés du cadre (10),
une unité de levage (20) connectée de manière pivotante au cadre (10), dans lequel l'unité de levage (20) est située à l'arrière de l'utilisateur en fonctionnement, dans lequel l'unité de levage (20) comprend un tube de siège (21), un siège (22) et un montant (25) ;
une unité de traction (30) comprenant une partie intermédiaire connectée de manière pivotante à une extrémité avant du cadre (10) ; et
un élément de connexion (35), qui connecte de manière pivotante une extrémité inférieure de l'unité de traction (30) à l'unité de levage (20), de sorte que lorsque l'utilisateur tire l'unité de traction (30), une force de levage est exercée sur le tube de siège (21) de l'unité de levage (20) via l'élément de connexion (35) pour supporter les hanches de l'utilisateur,
caractérisé en ce que
l'unité de bandes de roulement (15) est configurée pour supporter les pieds d'un utilisateur de sorte que le cadre (10) est maintenu fermement sur le sol par le propre poids de l'utilisateur pendant l'utilisation du support de squat ; et **en ce que**
le montant (25) comprend une extrémité arrière supérieure pour supporter de manière amovible le tube de siège (21), lorsque le tube de siège (21) est dans sa position la plus basse, dans lequel l'unité de levage (20) comprend en outre une articulation (26) destinée à connecter de manière pivotante une extrémité inférieure avant du montant (25) au tube supérieur (11), dans lequel l'articulation (26) sert à positionner

le montant (25) à un de plusieurs angles sélectionnés par rapport au tube supérieur (11) pour ajuster une élévation du tube de siège (21) sur le montant (25).

2. Support de squat selon la revendication 1, dans lequel chacun des tubes supérieur et inférieur (11, 12) comprend une traverse (111, 121) connectée à une extrémité inférieure.

3. Support de squat selon la revendication 2, dans lequel les bandes de roulement (151, 152) de l'unité de bandes de roulement (15) sont connectées aux deux extrémités de la traverse (121) du tube inférieur (12).

4. Support de squat selon la revendication 1, dans lequel le tube de siège (21) est connecté de manière pivotante au tube supérieur (11), dans lequel un siège (22) est supporté sur le tube de siège (21).

5. Support de squat selon la revendication 1, dans lequel l'unité de traction (30) comprend un levier (31) formé d'une partie intermédiaire connectée de manière pivotante à une extrémité avant du tube supérieur (11) et une poignée (32) connectée à une extrémité supérieure du levier (31).

6. Support de squat selon la revendication 5, dans lequel l'élément de connexion (35) comprend une extrémité connectée de manière pivotante à une extrémité inférieure du levier (31) et une autre extrémité connectée de manière pivotante à une partie intermédiaire du tube de siège (21).

7. Support de squat selon la revendication 1, dans lequel le cadre (10) comprend en outre une articulation pivotante (13) pour connecter de manière pivotante le tube inférieur (12) au tube supérieur (11), dans lequel l'articulation pivotante (13) comprend un axe (131) inséré dans le tube supérieur (11) et une tige (132) insérée de manière sélective dans le tube supérieur (11).

8. Support de squat selon la revendication 1, dans lequel l'articulation pivotante (26) inclut des ouvertures (27) agencées autour d'un axe de pivotement et une tige (28) insérée dans une ouverture sélectionnée des ouvertures (27).

9. Support de squat selon la revendication 1, dans lequel l'unité de traction (30) comprend :

un élément de prolongement (310) comprenant une extrémité connectée à la poignée (32), une autre extrémité connectée de manière télescopique au levier (31) et des ouvertures (311) entre les extrémités ; et

une fixation (33) insérée dans le levier (31) et une ouverture sélectionnée des ouvertures (311) de l'élément de prolongement (310).

10. Support de squat selon la revendication 9, dans lequel l'unité de traction (30) comprend en outre une unité de réglage (36) entre le levier (31) et l'élément de connexion (35).

11. Support de squat selon la revendication 10, dans lequel l'unité de réglage (36) comprend des ouvertures (37, 38) dans l'un du levier (31) et de l'élément de connexion (35) et une tige (39) insérée dans l'autre du levier (31) et de l'élément de connexion (35) et une ouverture sélectionnée des ouvertures (37, 38).

12. Support de squat selon la revendication 1, dans lequel les bandes de roulement (151, 152) de l'unité de bandes de roulement (15) sont situées entre le point de connexion de l'unité de levage (20) au cadre (10) et le point de connexion de l'unité de traction (30) au cadre (10) pour augmenter la stabilité du cadre (10) pour faciliter le maintien debout et immobile d'un utilisateur.

13. Support de squat selon la revendication 1, comprenant en outre un élément élastique (40) entre l'unité de levage (20) et le cadre (10) pour faciliter la montée de l'unité de levage (20).

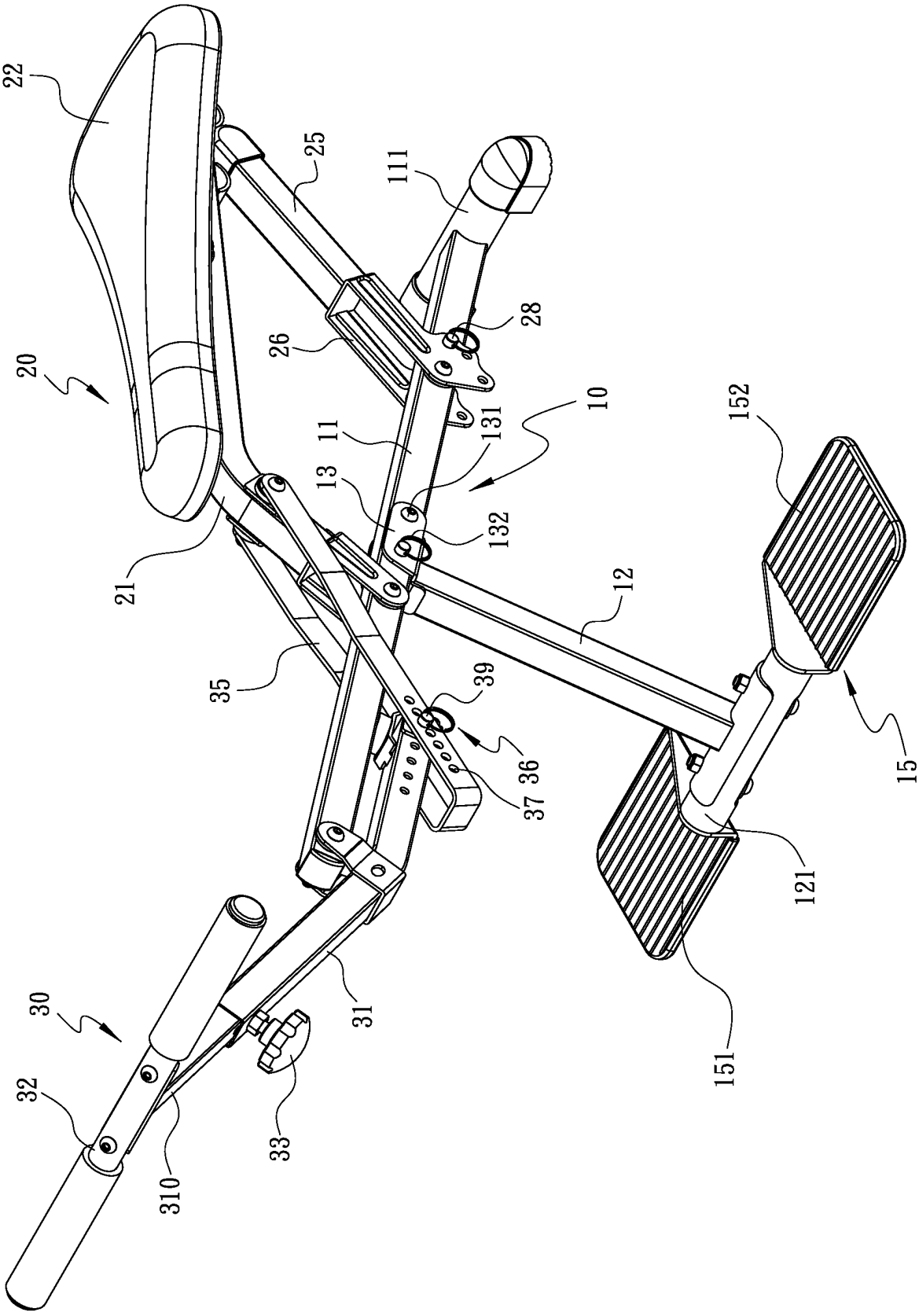

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FIG.1

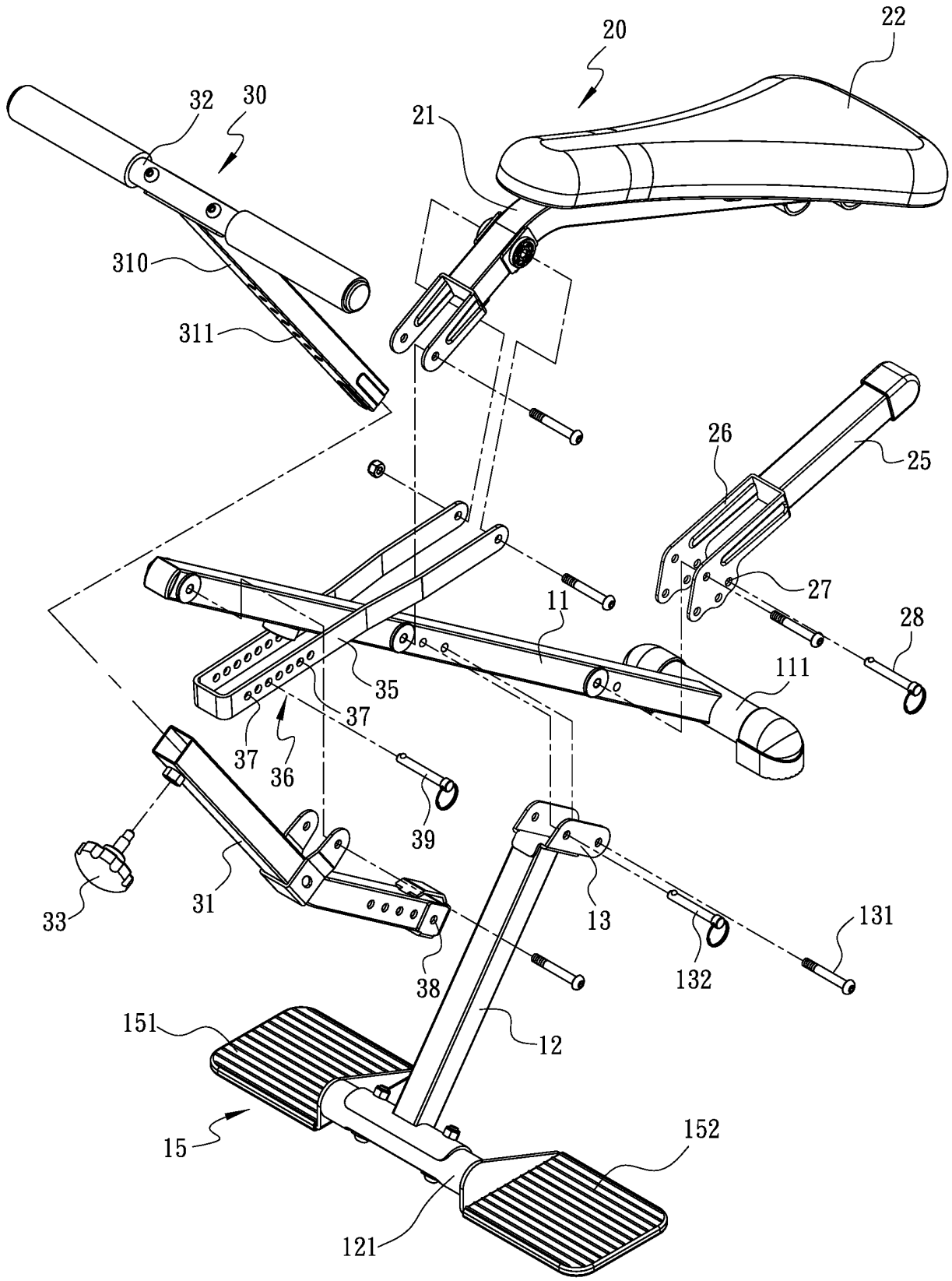

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FIG.2

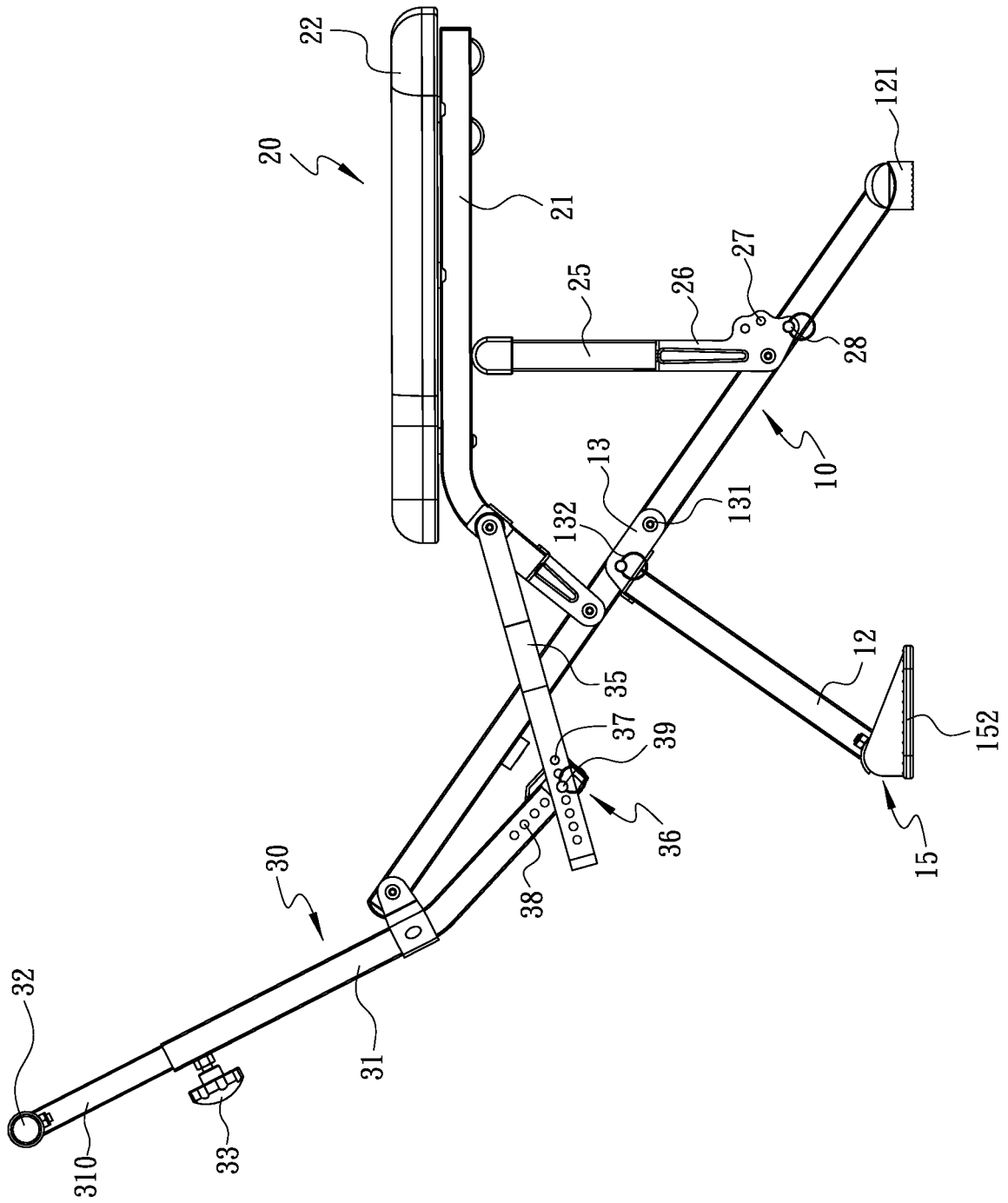

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FIG.3

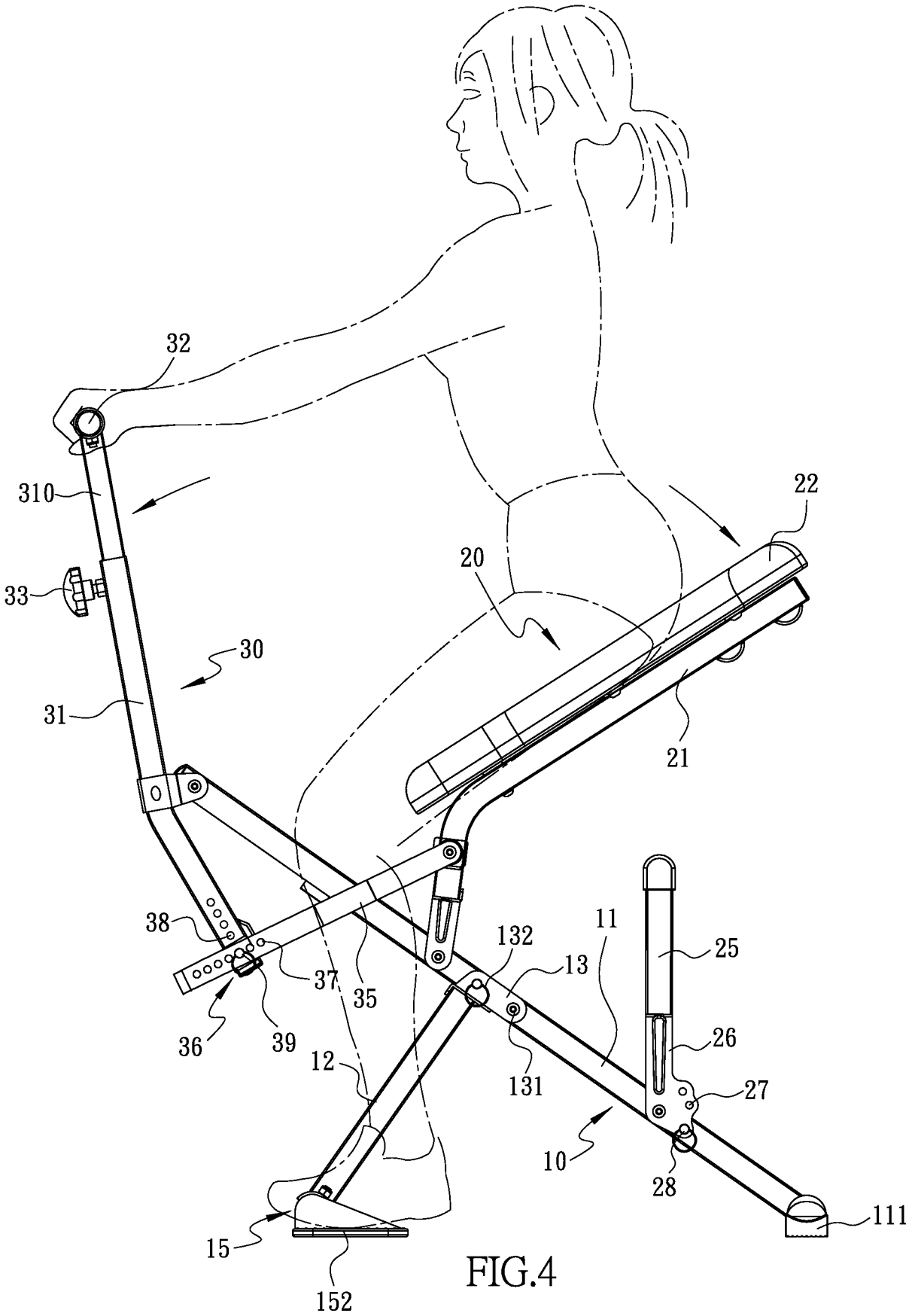

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FIG.4

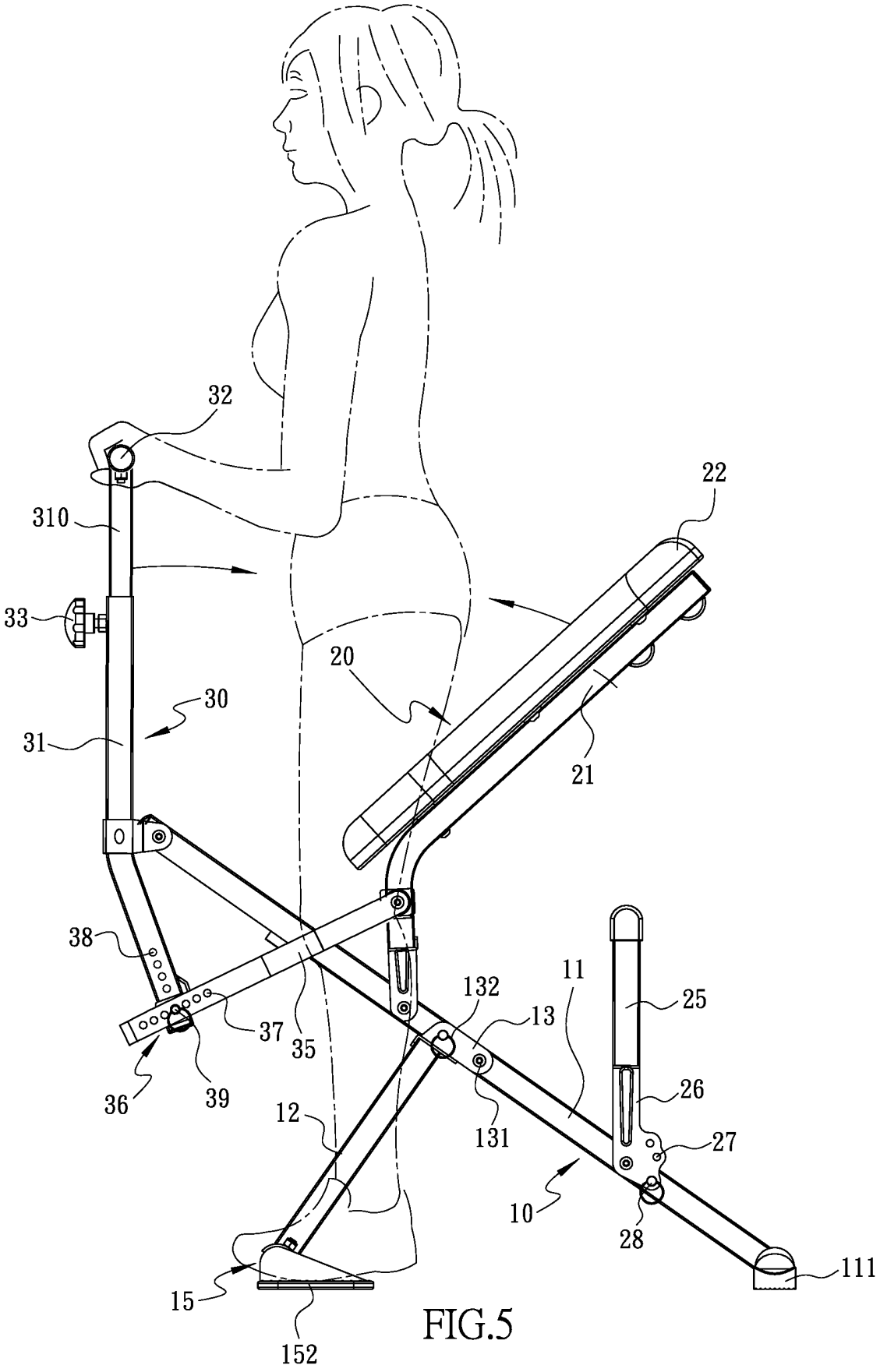

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FIG.5

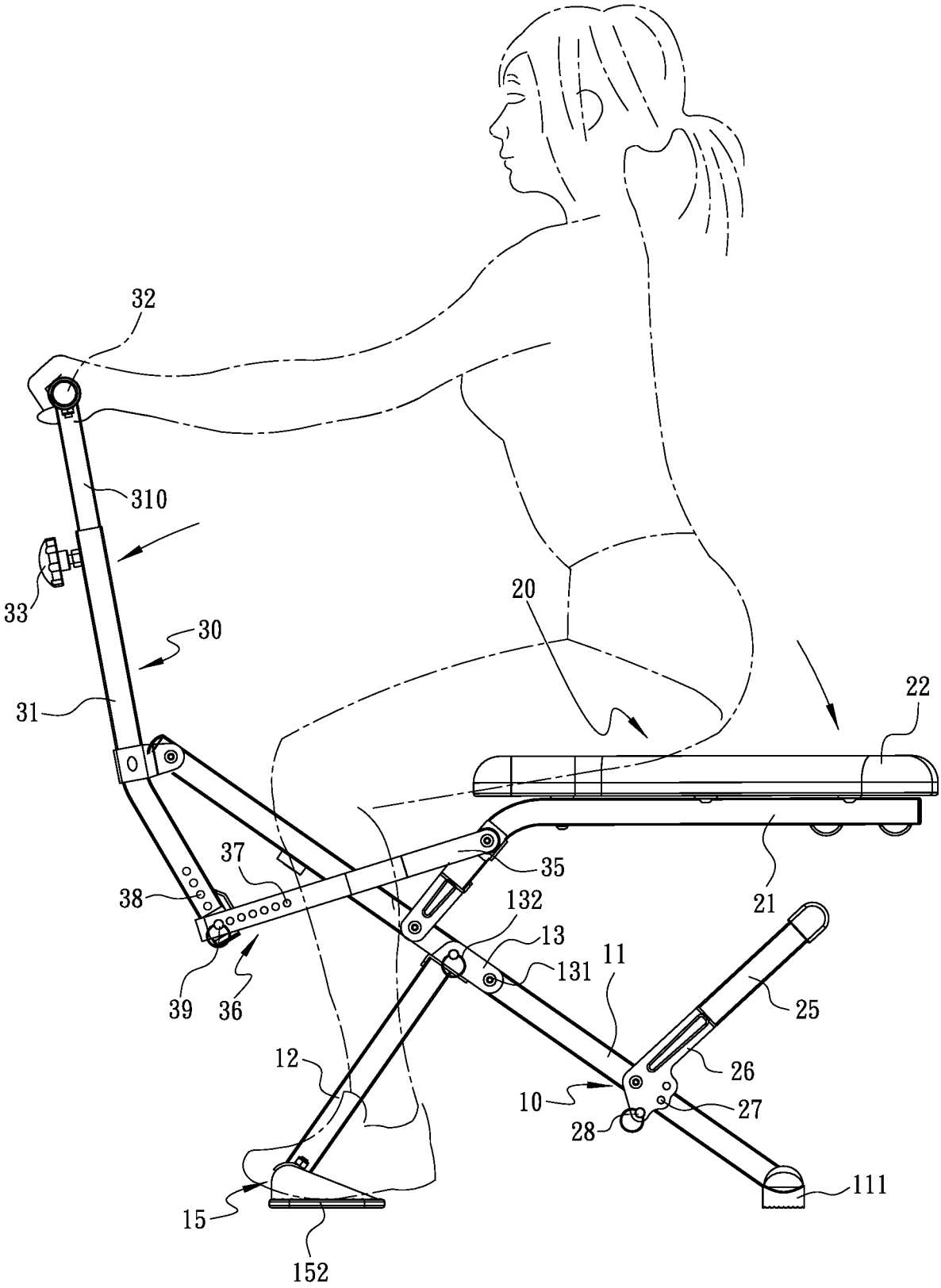

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FIG.6

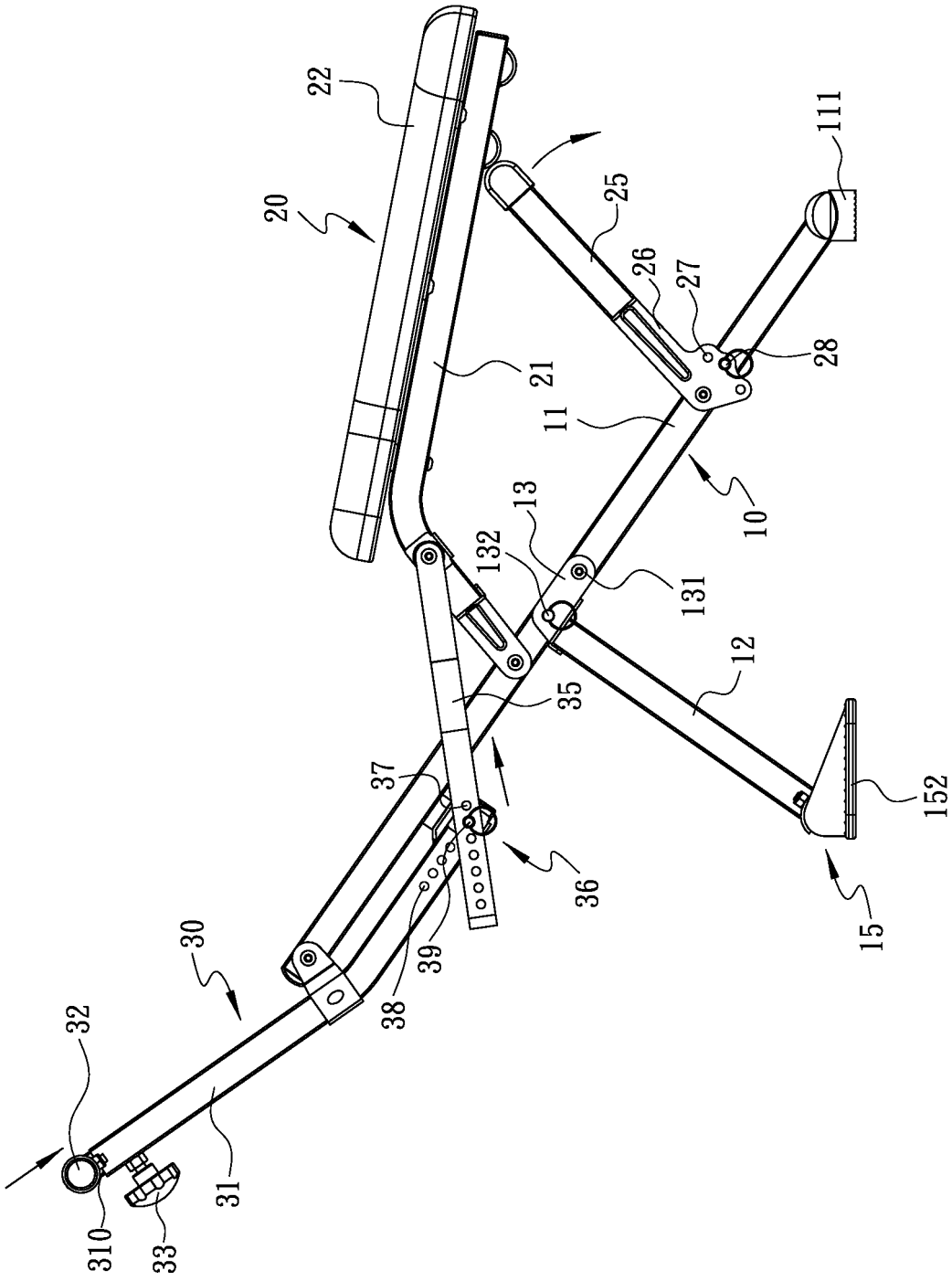

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FIG.7

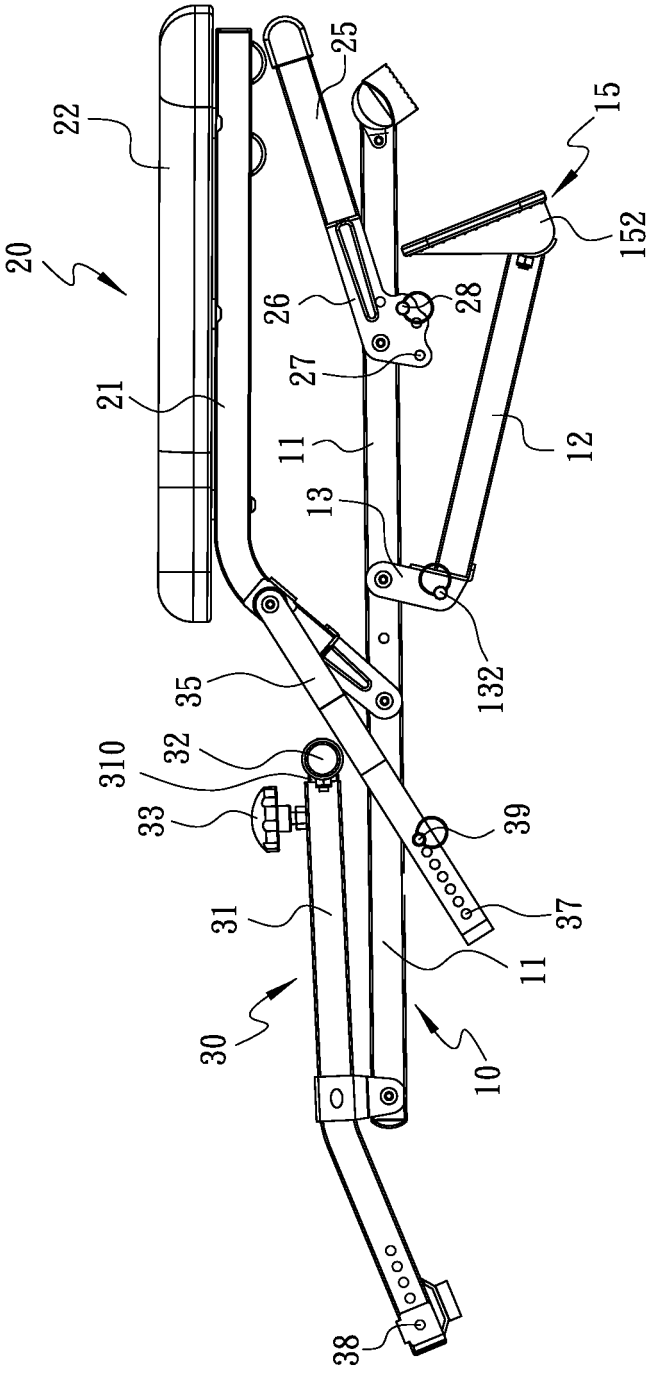

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FIG.8

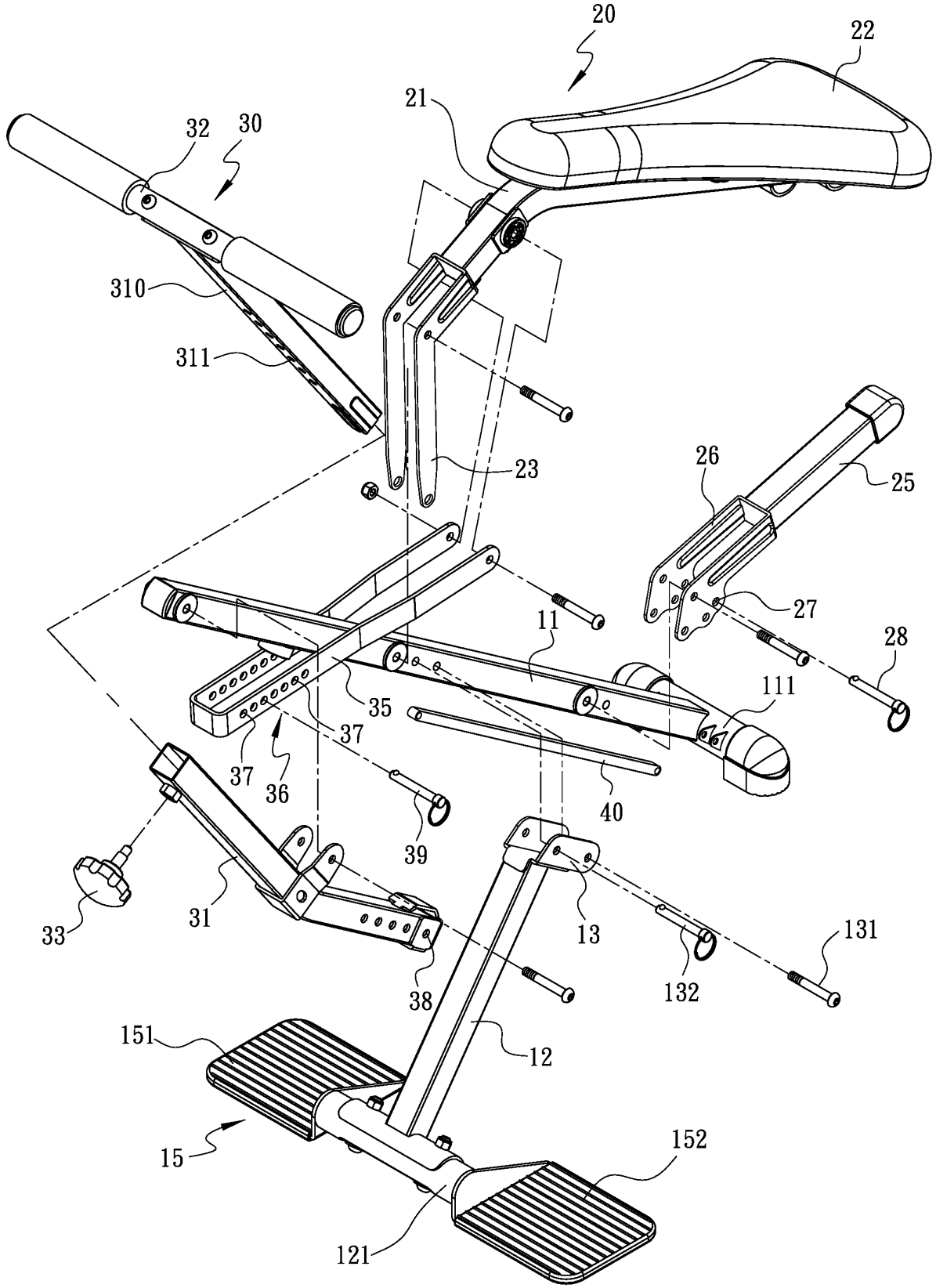

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FIG.9

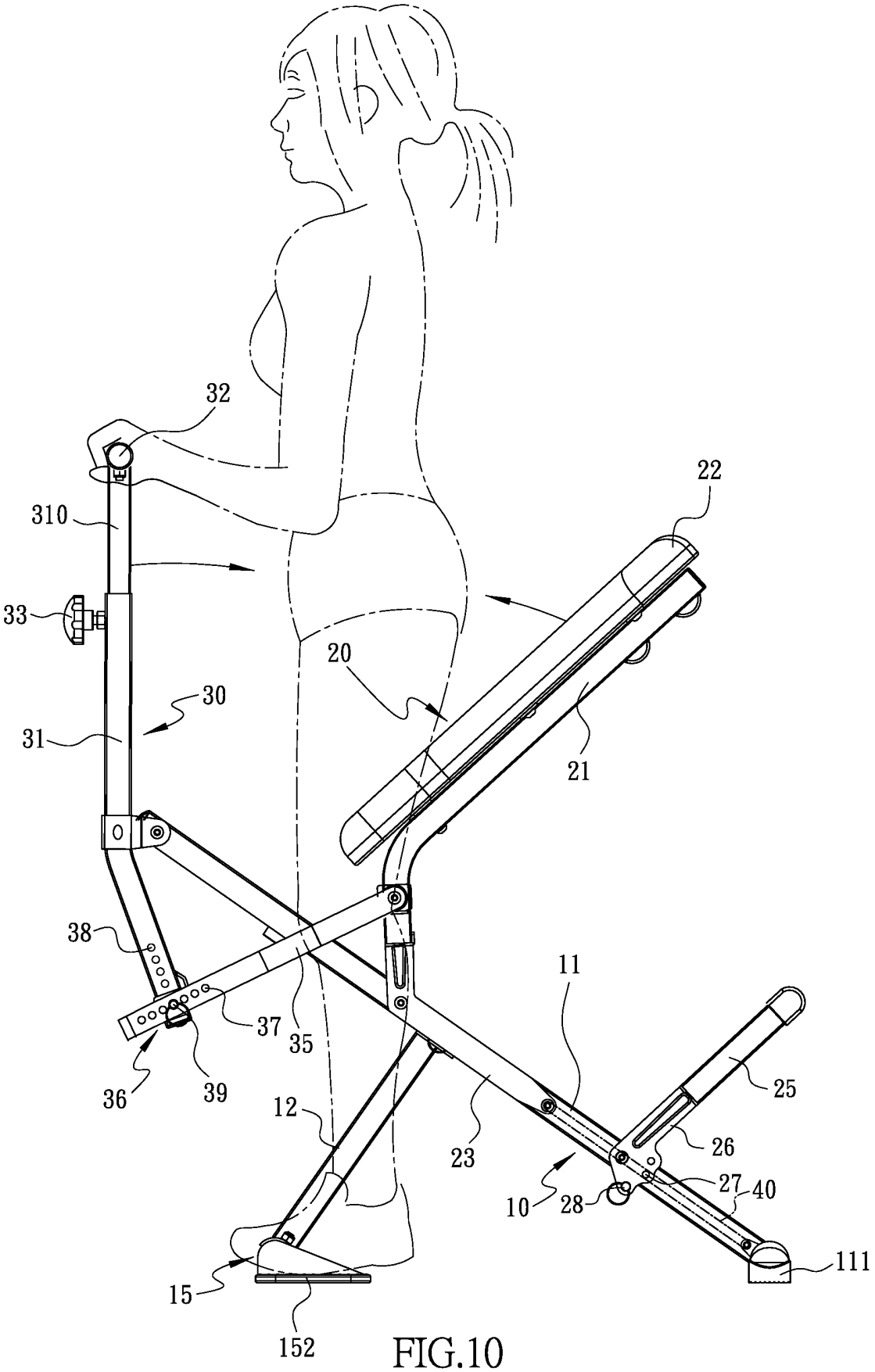

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FIG.10

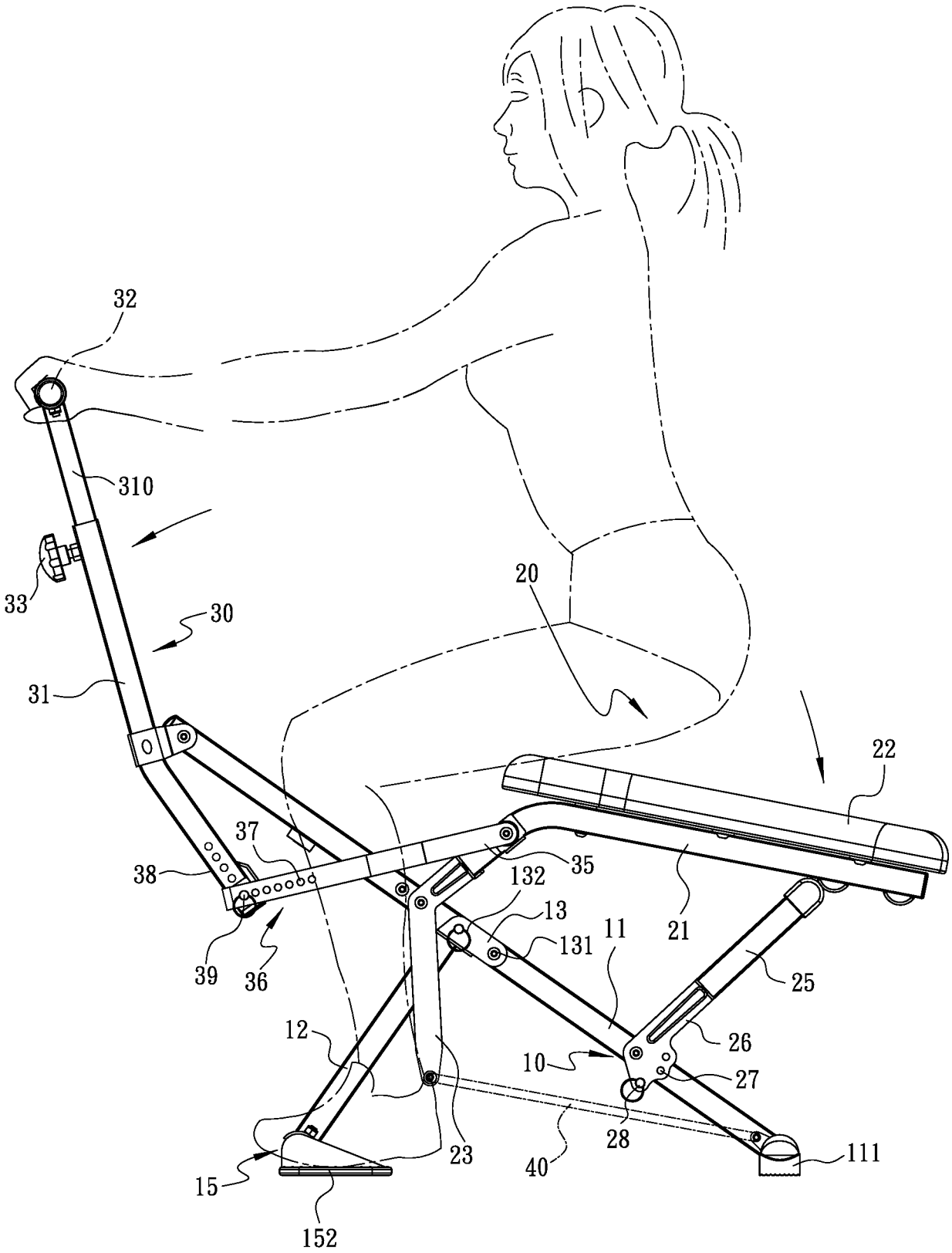

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FIG.11

REFERENCES CITED IN THE DESCRIPTION

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- US 5643147 A **[0003]**
- TW 313866 **[0004]**