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(54) **WALL MOUNTED TRAINING ARRANGEMENT**

(57) The present disclosure relates to a wall mounted training arrangement configured to move between a folded position for storage and at least a first unfolded position for training, comprising: a first rod pair and a second rod pair which are pivotably attached to the wall, two floor supports which are configured to support the wall mounted training arrangement against the floor in the first unfolded position, the two floor supports being pivotably attached to the first rod pair and the second rod pair, a training seat attached to the floor supports and the first rod pair and a training bar attached to the first rod pair or second rod, wherein the training seat and the training bar are positioned in the first unfolded position so as to allow a first training exercise.

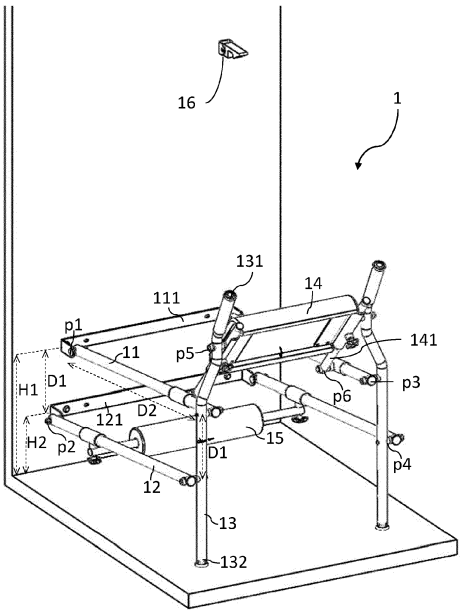

Fig. 1

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Description

Technical field

[0001] The present inventive concept relates to wall mounted training arrangements, more specifically to wall mounted training arrangements which are adapted to facilitate the user performance of back extensions and sit ups.

Background

[0002] Training the core muscles can reduce the risk of back pain and injuries while performing sports as well as daily tasks. Back extensions and sit ups are exercises that can help strengthen this part of the body. Back extensions focus on the muscles in the lower back and are usually performed by lying down facing the ground and then lifting the torso, sit ups focuses on the abdominal muscles and are usually performed by laying on the ground face up and lifting the torso. It can, however, be preferable to perform these exercises on equipment. Equipment designed for the specific exercises can help the user avoid bad form during the movement which prevents training injuries, and it can increase the range of the motion. Many training facilities offer back extension training equipment as well as sit ups equipment. However, existing equipment is bulky and require a relatively large area which makes it hard to have in a limited gym space such as a home gym.

Summery

[0003] It is an object of the present invention to provide an improved solution that alleviates the mentioned drawbacks with present solutions. In particular, a first object is to provide a training arrangement that has a more space efficient storage solution. A second object is to provide a training arrangement adapted for a user to preform two different types of exercises. A third object is to provide a method for arranging the training arrangement in a training position.

[0004] According to a first aspect of the invention a wall mounted training arrangement is provided. The wall mounted training arrangement is configured to move between a folded position for storage and at least a first unfolded position for training, the wall mounted training arrangement comprising: a first rod pair which is pivotably attached to the wall at a first height, a second rod pair which is pivotably attached to the wall at a second height being at a first distance from the first height, two floor supports which are configured to support the wall mounted training arrangement against the floor in the first unfolded position, the two floor supports being pivotably attached to the first rod pair and the second rod pair, wherein the floor supports have a first end and a second end, the first end configured to be positioned above the second end in the folded position, a training seat attached to the floor supports and the first rod pair and a training bar attached to the first rod pair or second rod pair, wherein the training seat and the training bar are positioned in the first unfolded position so as to allow a first training exercise.

[0005] Hereby, the wall mounted training arrangement provides a space efficient folded position for storage and can be folded into an unfolded position in which a training exercise may be carried out.

[0006] The first rod pair, the second rod pair and the two floor supports may form a frame onto which the training seat and the training bar may be mounted. The rod pairs being pivotably attached to the wall and the floor supports, may result in that the wall mounted training arrangement can be folded and unfolded. The first rod pair may be pivoted relative the wall from a position which is closer to parallel with the wall into a position in which it is closer to perpendicular to the wall. Moreover, the floor supports being pivotably attached to the first and the second rod pair may result in that the first and the second rod pair are rotatable relative the floor supports. This advantageous design may result in there being one folded position for which the first rod pair and the second rod pair are closer to parallel with the wall and one first unfolded position for which the first rod pair and the second rod pair are closer to perpendicular to the wall. Furthermore, the two floor supports, the training seat and the training bar may follow the rod pairs when they are moved closer to the wall into the folded position. As a result, in the folded position, the floor supports may be closer to parallel with the rod pairs, entailing that the wall mounted training arrangement may protrude less from the wall in the folded position compared to the unfolded position. Thus, the wall mounted training arrangement may require less space than in the first unfolded position. Thus, the wall mounted training arrangement may occupy a comparably small space in the folded position and the extra space may be used for other activities while the wall mounted training arrangement is in the folded position.

[0007] Moreover, the two floor supports may support the wall mounted training arrangement against the floor in the first unfolded position, which may result in the wall mounted training arrangement being stable enough to support the weight of the user.

[0008] The training seat and the training bar may allow a user to rest their body onto said training seat and training bar as to preform training exercises.

[0009] By "unfolded position" it may is meant a position which is configured to allow a user to perform an exercise onto the training arrangement.

[0010] By "folded position", it is meant that parts of an arrangement are placed so that they inhibit a smaller space that in the unfolded position.

[0011] By "rod pair", it is meant two elongated members that may or may not be portions of the same structure, e.g., two portions of a U-shaped bar.

[0012] By "pivotably attached to wall", it is meant di-

rectly or indirectly pivotably attached to the wall. It may mean that a component A is pivotably attached to a component B which in turn is attached to the wall, so that component A can pivot relative the wall.

[0013] By "two floor supports" it is meant two elongated members that may or may not be portions of the same structure, e.g., two leg-portions of a U-shaped bar.

[0014] According to one embodiment the first rod pair and the second rod pair are pivotably attached to the two floor supports at the same first distance from eachother as the first distance between the first height and the second height.

[0015] Thereby, the wall mounted training arrangement may inhabit less space in the folded position. This configuration may enhance a beneficial orientation of the floor supports and the rod pairs so as to enable the user to perform back extensions onto the training arrangement. The distance between the pivot attachment to the wall and the pivot attachment to the floor support for the rods of the first rod pair or second rod pair may the same for all rods. Furthermore, if the distance between the pivot attachment of the first rod pair to one floor support and the second rod pair to the same floor support may be the same first distance as between the first height and the second height, the first rod pair, the second rod pair, and the two floor supports may all be parallel with the wall in the folded position. The first rod pair, the second rod pair, and the two floor supports being parallel with the wall in the folded position may be also be beneficial for the space efficiency of the arrangement.

[0016] According to one embodiment, in the first unfolded position, the training seat is configured to support the abdomen or hips of a user and the training bar prevents the movement of the legs of said user, providing support for a back extension exercise. Thereby, the training arrangement may allow the user to perform back extension exercises in a position elevated from the floor.

[0017] The training seat may be enough elevated so that the user can bend over the seat until the upper body is completely up-side down, without hitting the head in the floor. Therefore, a large range of motion of the back extension exercise may be provided compared to doing back extensions on the floor. The user can place the feet, ancles or claves under the training bar which will prevent the user from falling forward around the training seat like a lever.

[0018] According to one embodiment, the wall mounted training arrangement is configured to be unfolded into the first unfolded position through an unfolding movement which is initiated by pivoting the two floor supports relative the first rod pair and/or second rod pair, so that the first end and the second end moves away from the wall, the first end being above the second end throughout the unfolding movement. By this, the first rod pair and the second rod pair may be forced to pivot away from the wall when the floor supports pivot relative them. The floor supports may move away from the wall and towards the floor. The first rod pair and the second rod pair may pivot away from the wall as a consequence of the movement of the floor supports.

[0019] The first rod pair and the second rod pair may pivot with the same rotational speed. The first rod pair and the second rod pair may be parallel throughout the unfolding movement. The unfolding movement may be continued until the floor supports touch the floor and the wall mounted training arrangement is in the first unfolded position.

[0020] Thereby, an easy unfolding movement may be provided. It may be possible to unfold or fold the wall mounted training arrangement in one single step. This may provide an easy and intuitive folding and unfolding process, for the user. Another advantage of the single unfolding step may be that it easier to set the arrangement up in a secure way, without missing any steps.

[0021] By "unfolding movement", it is meant moving from a folded position to an unfolded position. This may be a simultaneous movement of the different parts of an arrangement which changes the arrangement from unfolded to folded.

[0022] According to one embodiment the first rod pair and the second rod pair are parallel in the first unfolded position.

[0023] The first rod pair and the second rod pair being parallel may imply a space efficient design.

[0024] The distance between the pivotal attachment point to one floor support of the first rod pair and the pivotal attachment point of the second rod pair to the same floor support may be the same first distance. The distance between the pivotal attachment point to the wall and the pivotal attachment point to the floor support of the rod of the first or second rod pair may all be the same distance. This preferred embodiment may result in the first rod pair and the second rod pair being parallel in the first unfolded position.

[0025] This embodiment may also result in the first rod pair the second rod pair and the floor supports being parallel with the wall in the folded position.

[0026] According to one embodiment, the wall mounted training arrangement is further configured to move between the folded position for storage and a second unfolded position in which the training seat and the training bar are positioned in the second unfolded position so as to allow a second training exercise.

[0027] This embodiment may have the advantage that the wall mounted training arrangement may be used for more than one type of exercise. The user may choose to unfold the wall mounted training arrangement to the first unfolded position or to the second unfolded position. Thereby, the arrangement may allow two different training exercises to be performed on different unfolding positions of the same arrangement. This may be even more space efficient since no further equipment is needed for preforming the second training exercise.

[0028] According to one embodiment, the training seat supports the back of the thighs of the user and the training bar resists the movement of the feet and/or lower legs of

said user, providing support for abdominal exercises/sit ups, when in the second unfolded position.

[0029] Thereby, movement of the feet and/or lower legs of the user may be prevented, and abdominal exercises may be performed with the legs in a fixed position under the training bar. This may facilitate activation of intended muscle groups, while performing the abdominal exercises, by preventing the feet and legs of the user to move upwards. The thighs may be placed on the training seat. The upper body may be lying face up on the floor. The exercises may be performed by lifting the upper body off the floor. The body weight being placed on the training seat may prevent the wall mounted training arrangement to move when the training bar is subjected to force while resisting movement of the feet.

[0030] According to one embodiment the first rod pair and the second rod pair are crossed in the second unfolded position. By this configuration, the training seat may be positioned lower compared to in the first unfolded position. The training bar may be positioned higher compared to the first unfolded position. This configuration may be advantageous for performing abdominal exercises.

[0031] According to one embodiment, the wall mounted training arrangement is configured to be unfolded to the second unfolded position through an unfolding movement which is initiated by pivoting the two floor supports relative the first rod pair and/or second rod pair, so that the second end rotates towards the wall and the first end rotates away from the wall.

[0032] By this, a different unfolding movement is provided for unfolding the wall mounted training arrangement from the folded position to the second unfolded position than the unfolding movement of into the first unfolded position. The first rod pair and the second rod pair may be forced to be folded away from the wall when the floor supports pivot relative them. The floor supports may follow the first rod pair and the second rod pair away from the wall and towards the floor as they pivot. The first end of the floor support may have a rotational direction towards the wall but at the same time move translatively away from the wall as the floor support moves away from the wall as a whole.

[0033] The floor support may rotate so the first end moves from being above the second end into a position in which it is below the second end. The unfolding movement may continue until the first end reach the floor. The first rod pair may pivot further than the first rod pair so that the first and the second rod pair are crossing eachother.

[0034] This may provide a second easy unfolding movement. It may be possible to unfold the wall mounted training arrangement to the second unfolded position in one single step. This may provide an easy and intuitive folding and unfolding process for the user. Another advantage of the single step may be that it easier to set the arrangement up in a secure way, without missing steps. The user may choose which unfolded position to unfold into. The user may either move the floor supports away from and parallel with the wall to reach the first unfolded position or move the floor supports away from the wall while rotating the floor supports to reach the second unfolded position.

[0035] According to one embodiment, the second end of the floor supports is configured to rest against the floor in the first unfolded position whereas the first end of the floor supports is configured to rest against the floor in the second unfolded position.

[0036] The first end of the floor support and the second end of the floor support may be made from or covered by a material which is soft enough to not leave mark on the floor. The material may also be rigid enough to support the wall mounted training arrangement against the floor. In the folded position the first end is above the second end. In the unfolding movement to reach the first unfolded position, the floor supports may be moved by a purely translative movement and thereby stay substantially perpendicular to the wall. Thus, the second end may support the wall mounted training arrangement in the first unfolded position. The rotation of the floor support during the unfolding movement to the second position may turn the floor support so that the first end is below the second end and the first end may support the wall mounted training arrangement in the second unfolded position.

[0037] According to one embodiment, the end of the floor support opposite to the end resting against the floor, either the first end or the second end, is configured to be used as a handle for the user.

[0038] Handles may support the user in positioning the body in place for training on the wall mounted training arrangement. Handles may also support the user in during training on the wall mounted training arrangement. Handles may further support the user in getting up after training on the wall mounted training arrangement.

[0039] The first ends may be configured to rest against the floor in the second unfolded position and, by their size and shape, to be used as handles in the first unfolded position. The second ends may be configured to rest against the floor in the first unfolded position and be used as handles in the second unfolded position.

[0040] According to one embodiment, the training seat and the training bar are adjustably attached to the wall mounted training arrangement so their position can be adjusted to the body length of the user. Adjusting the placement of the training seat may allow the user to perform the exercise more ergonomically with better form.

[0041] Adjusting the placement of the training bar may, as well, allow the user to perform the exercise more ergonomically and with better form. It may also be more comfortable for the user to train on a training arrangement adjusted to their body length.

[0042] According to one embodiment, the wall mounted training arrangement extends a maximum of 25 centimetres from the wall when in the folded position. This may be achieved by arranging the wall mounted training arrangement so that the first, rod pair, the second rod

pair, and the floor supports are parallel against the wall and aligned at a distance of maximum 20 centimetres from the wall. This configuration may contribute to the space efficiency of the arrangement.

[0043] Preferably, the wall mounted training arrangement extends a maximum of 15 centimetres from the wall when in the folded position. This may be achieved by arranging the wall mounted training arrangement so that the first, rod pair, the second rod pair, and the floor supports are parallel against the wall and aligned at a distance of maximum 10 centimetres from the wall.

[0044] According to one embodiment, the wall mounted training arrangement further comprises a fastening mechanism securing the wall mounted training arrangement in the folded position. By this, the wall mounted training arrangement may be prevented from being unfolded without involvement from a user. Having a fastening mechanism may prevent injuries from the wall mounted training arrangement being unfolded unexpectedly onto a person. The fastening mechanism may be a catch which is configured, by its size and shape, to hold a rod, one of the floor supports, or any other portion of the training arrangement. The catch may be pivotable relative the wall. The catch may be configured to release said portion by pivoting the catch such that the portion is decoupled from the catch.

[0045] According to a second aspect of the invention, there is provided a method for unfolding a wall mounted training arrangement from a folded position for storage into a first unfolded position for training, wherein the wall mounted training arrangement comprises a first rod pair and a second rod pair pivotably attached to the wall and pivotably attached to two floor supports comprising a first end and a second end, the first end being above the second end in the folded position, is provided. The method comprising the simultaneous steps of: pivoting the floor supports relative the first rod pair and the second rod pair while the first pivotal point and the second end are kept vertically aligned and pivoting the first rod pair and the second rod pair so that the floor supports move away from the wall into a floor contacting position which places the second end of the floor supports on the floor. By this, a wall mounted training arrangement may have a folded position for storing which is more space efficient than the unfolded position. The unfolding movement may require only one movement to be performed by the user.

[0046] By "simultaneous steps", it is meant that the steps are performed by the same continuous movement. Thus, the timing of the steps, i.e., the different movements, is at least partly overlapping.

[0047] According to one embodiment the method further comprises the step of unfolding the wall mounted training arrangement from a folded position for storage into a second unfolded position for training, including the simultaneous steps of: pivoting the floor supports relative the first rod pair and the second rod pair in a rotational direction where the first end rotates away from the wall and the second end rotates towards the wall, and pivoting the first rod pair and second rod pair so that the floor supports move away from the wall into a floor contacting position which places the first end of the floor supports on the floor.

[0048] By this, the wall mounted training arrangement may have two unfolded positions which may provide two different types of training exercises to be performed. The unfolding movement may only require one movement to be performed by the user.

Brief description of drawings

[0049] The invention will in the following be described in more detail with reference to the enclosed drawings, wherein:

Fig. 1 shows a perspective view of the wall mounted training arrangement according to one embodiment of the invention with the wall mounted training arrangement in a first unfolded position.

Fig. 2 shows a frontal view of the wall mounted training arrangement according to one embodiment with the wall mounting training arrangement being in a first unfolded position.

Fig. 3 shows a perspective view of the wall mounted training arrangement according to one embodiment of the invention with the wall mounted training arrangement in a second unfolded position.

Fig. 4 shows a frontal view of the wall mounted training arrangement according to one embodiment with the wall mounting training arrangement being in a second unfolded position.

Fig. 5, 6, 7 and 8 show a side view sequence of an unfolding movement of the wall mounted training arrangement from a folded position to a first unfolded position.

Fig. 9, 10 and 11 show a side view sequence of an unfolding movemet of the wall mounted training arrangement into a second unfolded position.

Fig. 12 shows a side view of a wall mounted training arrangement with an adjustable training bar and an adjustable training seat, according to one embodiment of the invention.

Fig. 13 shows a partial close-up view of an embodiment with an adjustable leg support.

Fig. 14 shows a flow chart of a method for unfolding a wall mounted training arrangement from a folded position into a first unfolded position according to one embodiment of the invention.

Detailed description

[0050] The present invention will be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather,

these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. In the drawings, like numbers refer to like elements.

[0051] Fig. 1 Shows a perspective view of a wall mounted training arrangement 1 according to one embodiment of the invention. The wall mounted training arrangement 1 comprises a first rod pair 11, pivotably attached to the wall. The first rod pair 1 is attached to the wall at a first height H1.

[0052] The first rod pair 11 is attached to the wall with a first bracket 111. The first bracket 111 is provided with pre-drilled holes for screwing it to the wall. The first bracket 111, in Fig 1, is further provided with bent edges. The rods of the first rod pair 11 are pivotably attached to one bent edge each, at a first pivotal point p1 each. The first bracket 111, in the illustrated embodiment is a thin, elongated, ribbon shaped structure. Other designs of the first bracket 111 are, however, possible. Another possible design is that the first bracket 111 is divided into multiple pieces, one for attaching each rod of the first rod pair 11 to the wall. The first pivotal points p1 may not be on bent edges, but on other types of structures of the first bracket 111.

[0053] The two first pivotal points p1 are aligned horizontally when the first rod pair 11 is attached to the wall. The first rod pair 11 is pivotable around the first pivotal points p1 in vertical planes perpendicular to the wall.

[0054] The rods of the first rod pair are elongated structures. In Fig 1, the rods of the first rod pair 11 are shaped as cylinders and have a fixed diameter along their axis. However, other forms are possible. The width may vary along the axis of the rods of the first rod pair 11. The rods of the first rod pair may have a regular polygonal or irregular cross-section. The rods of the first rod pair 11 may be portions of the same structure. The width between the first rod pair 11 should be large enough for a person to stand and sit between them comfortably.

[0055] The wall mounted training arrangement 1 further comprises a second rod pair 12 pivotably attached to the wall. The second rod pair 12 is attached to the wall at a second height H2. The second height H2 is a first distance D1 below the first height.

[0056] The second rod pair 12 is attached to the wall with a second bracket 121. The second bracket 121 is provided with pre-drilled holes for screwing it to the wall. The second bracket 121, in Fig 1, is further provided with bent edges. The rods of the second rod pair 12 are pivotably attached to one bent edge each, in a second pivotal point p2 each. Although the second bracket 121 is a thin, elongated, ribbon shaped structure in Fig 1, other designs of the second bracket 121 are possible. Another possible design is that the second bracket 121 is divided into multiple pieces, one for attaching each rod of the second rod pair 12 to the wall. The second pivotal points p2 may not be on bent edges, but on other types of structures of the first bracket 121.

[0057] The two second pivotal points p2 are aligned horizontally when the rod pair 12 is attached to the wall. The second rod pair 12 is pivotable around the second pivotal points p2 in vertical planes perpendicular to the wall.

[0058] The rods of the second rod pair 12 is elongated structures. In the illustrated embodiment, the rods of the first rod pair 11 are shaped as cylinders and have a fixed diameter along their axis. However, other forms are possible. The width may wany along the axis of the rods of the second rod pair 12. The rods of the second rod pair 12 may have a regular polygonal or irregular cross-section. The rods of the second rod pair 12 may be portions of the same structure. The width between the second rod pair 12 should be large enough for a person to stand and sit between them comfortably.

[0059] The middle point between the rods of the first rod pair 11 is vertically aligned with the middle point between the rods of the second rod pair 12. The distance between the rods of the first rod pair 11 is shorter than the distance between the second rod pair 12, enabling the first rod pair 11 to cross the second rod pair 12 in said vertical plane. Alternatively, the distance between the rods of the second rod pair 12 may be shorter than the distance between the first rod pair 11, enabling the first rod pair 11 to cross the second rod pair 12 in said vertical plane.

[0060] The wall mounted training arrangement 1 further comprises two floor supports 13. In the illustrated embodiment, the floor supports 13 are cylindrical tubes bent in three places. However, other designs of the floor supports 13 are possible. The floor supports 13 may be elongated structure in many different shapes. The floor supports may have other cross-sections than circular. The floor supports 13 may be bent in less or more than three places. The two floor supports 13 may also pe portions of the same structure, e.g., there may be a rod connecting the floor support.

[0061] There are third pivotal points p3 the on each of the two floor supports 13. The rods of the first rod pair 11 are pivotably connected to one third pivotal point p3 each. The first rod pair 11 are pivotably connected to the floor support 13 such that the first rod pair 11 and the floor supports 13 may be pivoted relative eachother in a vertical plane perpendicular to the wall. The rods of the second rod pair 12 are pivotably connected to one fourth pivotal point p4 each. The second rod 12 pair may be connected to the floor support 13 such that the second rod pair 12 and the floor supports 13 can pivot relative eachother in vertical planes perpendicular to the wall. In the illustrated embodiment, the first rod pair 11 are inside of the floor supports 13, at the pivot points p3 and the second rod pair are outside of the floor supports 13. In a preferable embodiment, the third pivotal point p3 of one floor support 13 and the fourth pivotal point p4 of the same floor support 13 may be placed at the first distance D1 from eachother. Furthermore, in the illustrated embodiment, the distance between the first pivotal point p1 of one rod of the first rod pair 11 and the third pivotal

point p3 of the same rod, are placed with a second distance D2 between, and the second pivotal point p2 of one rod of the second rod pair 12 and the fourth pivotal point p4 of the same rod are placed with the same second distance D2 between.

[0062] The two floor supports 13 each comprises a first end 131. The two floor supports 13 further comprises a second end 132 each. The first ends 131 and the second ends 132 may be adapted to be rigid enough to support the wall mounted training arrangement 1 against the floor and soft enough to not leave marks on the floor. The first end 131 may be adapted to be used as a handle by the user training on the wall mounted training arrangement 1. The second ends 132 may also be adapted to be used as a handle by the user training on the wall mounted training arrangement 1.

[0063] The wall mounted training arrangement 1 further comprises a training seat 14. The training seat 14 may be adapted to allow a user to lean said user's body against it. The seat may be wide enough for a person to rest their hips or thighs comfortably onto said seat. In Fig. 1 the seat is, illustrated as rounded for the purpose of comfort. Furthermore, the seat 14 may be cushioned for comfort. The seat 14 may be placed between the two floor supports 13. The training seat 14 may be pivotably attached to the floor supports 13 and to the first rod pair 11 by means of two seat rods 141.

[0064] The seat 14 may be attached to the two seat rods 141. The two seat rods 141 may be placed on one side each of the seat 14. The two seat rods 141 may be placed between the seat 14 and the floor supports 13. The two seat rods 141 may be pivotably attached to one floor support 13 each at a fifth pivotal point p5 each. Thereby the seat rods 141 and the floor supports 13 may be pivoted relative eachother in vertical planes perpendicular to the wall. The fifth pivotal points p5 may be placed on the floor supports 13 between the third pivotal point p3 and the first end 131. The seat rods 141 may further be attached to one first rod pair 11 each. The seat rods 141 may be attached to one of the rods each of the first rod pair 11 at a sixth pivotal point p6 each. Thereby, the seat rods 141 and the first rod pair 11 may be pivoted relative eachother in vertical planes perpendicular to the wall. The sixth pivotal points p6 may be adapted to move along the rods of the first rod pair 11. In Fig. 1, the sixth pivotal points p6 may be placed on cylinders encapsulating the rods of the firs rod pair 11. The cylinders may be adapted to glide along the rods of the first rod pair 11. The sixth pivotal points p6 may also be adapted to glide in a rail of the rods of the first rod pair 11.

[0065] The wall mounted training arrangement 1 further comprises a training bar 15. Although the training bar is illustrated in Fig 1. to be attached to the second rod pair 12, the training bar 15, may in an alternative embodiment be attached to the first rod pair 11. The training bar may be long enough for a user to lean said user legs on comfortably. The training bar 15 in Fig. 1 is of cylindrical shape, placed parallel with the wall. However other designs may be possible. The training bar 15 may be an elongated structure of many different designs. The shape of the training bar 15 may be flat, square or another shape. The training bar 15 may be cushioned for comfort.

[0066] The wall mounted training arrangement 1 is adapted to have one folded position P0 for storage and at least a first unfolded position P1 for training. The embodiment of Fig. 1 shows the wall mounted training arrangement 1 in the first unfolded position P1.

[0067] The embodiment in Fig. 2 shows a frontal view of the wall mounted training arrangement 1 in the first unfolded position P1.

[0068] In the first unfolded position P1, the wall mounted training arrangement 1 is adapted to aid the user in the performance of back extension exercises. The wall mounted training arrangement is adapted so, that in the first unfolded position P1, the training seat (14) supports the abdomen or hips of the user and the training bar (15) resists the movement of the legs of said user.

[0069] In the first unfolded position P1 the first rod pair 11 and the second rod pair 12 are parallel. Moreover, in the first unfolded position P1 the second ends 132 of the floor supports 13 are resting against the floor. The pivotal points p3 of one floor support 13 are placed above the pivotal points p4 of the same floor support on a vertical line.

[0070] Fig. 3 shows a perspective view of the wall mounted training arrangement 1 according to one embodiment. The wall mounted training arrangement of Fig. 3 is shown in a second unfolded position P2. In the second unfolded position P2, the wall mounted training arrangement 1 is adapted to aid the user in the performance of abdominal exercises/sit ups. The wall mounted training arrangement is adapted so, that in the second unfolded position P2, the training seat 14 supports the back of the thighs of the user and the training bar 15 resists the movement of the feet and lower legs of said user. Moreover, in the second unfolded position P2, the first rod pair 11 and the second rod pair 12 are crossed. In the second unfolded position P2 the first ends 131 of the floor supports 13 may be resting against the floor.

[0071] Fig. 4 shows a frontal view of a wall mounted training arrangement 1 according to one embodiment. The wall mounted training arrangement of Fig. 4 is in the second unfolded position P2.

[0072] Fig. 5 shows a side view of a wall mounted training arrangement 1 according to one embodiment. In Fig. 5, the wall mounted training arrangement 1 is in the folded position P0. In the folded position P0, it may be preferable for the first rod pair 11 and the second rod pair to be parallel with the wall. It may also be preferable for the two floor supports 13 to be parallel with the wall, in the folded position P0. In the folded position P0, the first end 131 of the floor supports 13 are positioned above the second ends 132 of the floor support 132. In the embodiment of Fig. 5, the side of the training seat 14 which is adapted for the user to place his or her body is parallel with the wall and facing the wall. Furthermore, the seat

rods 141 are parallel with the wall.

[0073] In the embodiment of Fig 5. the first rod pair 11, the second rod pair 12, the two floor supports 13, and the seat rods 141 are all parallel with each other and aligned at a set third distance D3 from the wall. The third distance D3 may be smaller than 30 mm, preferably be smaller than 20 mm, and more preferably be smaller than 10 mm. The whole wall mounted training arrangement may extend less than 20 cm out from the wall, preferably less than 16 cm out from the wall.

[0074] The wall mounted training arrangement 1 may further comprise a fastening mechanism 16. The fastening mechanism 16 may be adapted to secure the wall mounted training arrangement 1 to the wall. The fastening mechanism 16 in Fig 5. is a catch attached to the wall. The catch may be placed so that when the wall mounted training arrangement 1 is in the folded position P2 the catch can be turned so that it grabs the wall mounted training arrangement 1. The fastening mechanism 16 may be placed so that it grabs any part of the wall mounted training arrangement 1. The fastening mechanism 16 may be of any other kind. The fastening mechanism may be a snap-in connection, magnets, hook-and-loop fasteners or a band with buttons.

[0075] The sequence of Fig. 5 to Fig. 6 to Fig. 7 to Fig. 8 shows a side view of how one embodiment of the wall mounted training arrangement 1 may be unfolded from the folded P0 to the first unfolded position P1. Before the unfolding movement is initiated the first rod pair 11, the second rod pair 12, the two floor supports 13, and the seat rods 141 are all be vertically aligned and parallel with the wall. The unfolding movement is initiated by pivoting the floor supports 13 relative the first rod pair 11 and relative the second rod pair 12. The third pivot point p3 and the fourth pivot point p4 of one floor support are be vertically aligned while initiating the unfolding movement. From this position, the floor supports 13 are moved away from the wall. Consequently, the first rod pair 11 pivots around the first pivot points p1 and the second rod pair pivots around the second pivot points p2. The first rod pair 11 and the second rod pair 12 pivot with the same rotational speed. The first rod pair 11 may pivot so that the third pivot point p3 moves away from the wall. The second rod pair 12 may pivot so that the fourth pivot point p4 moves away from the wall. The floor supports 13 are moved away from the wall and towards the floor, in a purely translatory movement. The movement of the floor supports 13, the first rod pair 11 and the second rod pair 12 is continued until the second ends 132 of the floor supports 13 reach the floor. Throughout the movement, the perpendicular distance between the first rod pair 11 and the second rod pair 12 grows larger. Throughout the movement, the first rod pair 11 and the second rod pair 12 parallel. The pivotal point p6 moves away from the second pivotal point p2 by gliding on the first rod pair 11.

[0076] The sequence of Fig. 5 to Fig. 9 to Fig. 10 to Fig. 11 shows a side view of how one embodiment of the wall mounted training arrangement 1 may be unfolded from the folded P0 to the second unfolded position P2. Before the unfolding movement is initiated the first rod pair 11, the second rod pair 12, the two floor supports 13, and the seat rods 141 are all be vertically aligned parallel with the wall. The unfolding movement is initiated by pivoting the floor supports 13 relative the first rod pair 11 and relative the second rod pair 12 so that the first end 131 rotates away from the wall and the second end 132 rotates towards the wall. The floor supports are pivoted around the third pivotal point p3 and around the fourth pivotal point p4 so that the first end 131 moves below the second end 132. Simultaneously, the floor supports 13 move away from the wall and the first end 131 moves closer to the floor. Consequently, the first rod pair 11 pivots around the first pivotal points p1 and the second rod pair 12 pivots around the second pivotal points p2. The first rod pair 11 pivots so that the third pivot point p3 moves away from the wall. The second rod pair 12 pivots so that the fourth pivot point p4 moves away from the wall. The first rod pair 11 pivots with a rotational speed which is faster than the rotational speed of the second rod pair 12 pivots. Therefore, the first rod pair 11 and the second rod pair 12 are moved from a position in which they are aligned into a position in which they cross eachother. This movement is continued until the first end 131 of the floor supports 13 reaches the floor. The pivotal point p6 does, throughout the movement, move away from the second pivotal point p2 by gliding on the first rod pair 11.

[0077] Fig. 12 shows a side view of the wall mounted training arrangement 1 according to one embodiment. The training seat 14 is adjustably attached to the training arrangement 1 so that its position can be adjusted to fit the body length of the user. The training seat 14 is slidably attached to the seat rods 141. To fix the training seat so that it does not glid during usage, there is a fixation mechanism onto the training seat 14 to fix the training seat 14 relative the seat rods 141. The fixing mechanism 17 may be a screw, a pin, a catch, or another mechanism. According to an alternative embodiment, the training seat 14 may be attached directly to the floor supports 13. The training seat may be slidably attached to the floor supports 13. If the training seat is attached directly to the floor supports, there may be a fixation mechanism onto the training seat 14 to fix the training seat 14 relative the floor supports 13.

[0078] In the illustrated embodiment, the training bar 15 is adjustably attached to the training arrangement 1 so its position can be adjusted to fit the body length of the user. The training bar is slidably attached to the first rod pair 11 or the second rod pair 12. To enable fixation of the training seat relative the second rod pair 12, so that it does not glid during usage, the attachment point of the training bar 15 is equipped with a fixing mechanism 18. The fixing mechanism 18 may be a screw, a pin, a catch, or another mechanism.

[0079] Fig. 13 shows a partial close-up view of an embodiment with an adjustable training bar 15. The training

bar 15 is adjustably attached to the training arrangement 1 so its position can be adjusted to fit the body length of the user. In this embodiment, which is compatible and combinable with all other embodiments herein, the training bar 15 is displaced on a displacement rod so that the training bar, which may be used as a leg support, may be rotated to be adjusted both in height and in length around a rotation axis. The rotation axis may be around a bar attached to any part of the training arrangement.

[0080] Fig. 14 shows a flow chart of a method S0 for unfolding a wall mounted training arrangement 1 from a folded position P0 for storage into a first unfolded position P1 for training, according to one embodiment of the invention. The method comprises the steps of pivoting S1 the floor supports relative the first rod pair 11 and relative the second rod pair 12. The method S0 comprise the step of: pivoting P1 the two floor supports 13 relative the first rod pair 11 and relative the second rod pair 12 while the first 131 ends and the second ends 132 move away from the wall, whereas the first ends 131 are kept above the second ends 132.The third pivotal points p3 are kept above the fourth pivotal points p4. The third pivotal point p3 of one floor support and the fourth pivotal point of the same floor support p4 are vertically aligned throughout the step of pivoting P1 the floor supports relative the first rod pair 11 and relative the second rod pair 12. The method S0 further comprises the step of pivoting S2 the first rod pair 11 and the second rod pair 12 so that the floor supports 13 move away from the wall into a floor contacting position. The first rod pair 11 and the second rod 12 pair may be parallel throughout the step of pivoting S2 the first rod pair 11 and the second rod 12 pair way from the wall. The first rod pair 11 and the second rod pair 12 may pivot with the same rotational speed. The first rod pair 11 may pivot around the first pivotal point p1. The second rod pair 12 may pivot around the second pivotal point p2. The method further comprises the step of placing the second ends 132 of the floor supports 13 on the floor.

[0081] The method S0 may further comprise steps which may unfold the wall mounted training arrangement to a second unfolded position for training. The method comprises the step of pivoting S1 the floor supports 13 relative the first rod pair 11 and relative the second rod pair 12 in a rotational direction where the first end 131 rotates away from the wall and the second end 132 rotates towards the wall. The third pivotal points p3 may move downwards relative the fourth pivotal points p4. The third pivotal point p3 may move below the fourth pivotal p4 point. The first end 131 may move downwards relative the second end 132. The first end 131may be moved from a position in which it is above the second end into a position in which it is below the second end 132. The method may further comprise the step of pivoting S2 the first rod pair 11 and second rod pair 12 so that the floor supports 13 move away from the wall into a floor contacting position. The first rod pair 11 may cross the second rod pair 12 while pivoting. The first rod pair 11 may pivot with larger rotational speed relative the rotational speed of the second rod pair. The method may further comprise the step of placing the first ends 131 of the floor supports 13 on the floor.

Claims

1. A wall mounted training arrangement (1) configured to move between a folded position (P0) for storage and at least a first unfolded position (P1) for training, the wall mounted training arrangement comprising:

   a first rod pair (11) which is pivotably attached to the wall at a first height (H1),
   a second rod pair (12) which is pivotably attached to the wall at a second height (H2) being at a first distance (D1) from the first height (H2),
   two floor supports (13) which are configured to support the wall mounted training arrangement (1) against the floor in the first unfolded position (P1), the two floor supports being pivotably attached to the first rod pair (11) and the second rod pair (12), wherein the floor supports have a first (131) end and a second end (132), the first end (131) configured to be positioned above the second end (132) in the folded position (P0),
   a training seat (14) attached to the floor supports (13) and the first rod pair (11) and
   a training bar (15) attached to the first rod pair (11) or second rod pair (12), wherein the training seat (14) and the training bar (15) are positioned in the first unfolded position so as to allow a first training exercise.

2. The wall mounted training arrangement (1) according to claim 1, wherein the first rod pair (11) and the second rod pair (12) are pivotably attached to the two floor supports (13) at the same first distance (D1) from eachother as the first distance (D1) between the first height (H1) and the second height (H2).

3. The wall mounted training arrangement (1) according to claim 1 or 2,
   wherein in the first unfolded position (P1) the training seat (14) is configured to support the abdomen or hips of a user and the training bar (15) prevents the movement of the legs of said user, providing support for a back extension exercise.

4. The wall mounted training arrangement (1) according to claim 3, wherein the wall mounted training arrangement (1) is configured to be unfolded into the first unfolded position (P1) through an unfolding movement which is initiated by pivoting the two floor supports (13) relative the first rod pair (11) and/or second rod pair (11), so that the first end (131) and the second end (132) moves away from the wall, the

first end (131) being above the second end (132) throughout the unfolding movement.

5. The wall mounted training arrangement (1) according to claim 3 or 4,
wherein the first rod pair (11) and the second rod pair (12) are parallel in the first unfolded position.

6. The wall mounted training arrangement (1) according to any one of claims 1 to 5, further configured to move between the folded position (P0) for storage and a second unfolded position (P2) in which the training seat (14) and the training bar (15) are positioned in the second unfolded position (P2) so as to allow a second training exercise.

7. The wall mounted training arrangement according to claim 6, wherein the training seat (14) supports the back of the thighs of the user and the training bar (15) resists the movement of the feet and/or lower legs of said user, providing support for abdominal exercises/sit ups, when in the second unfolded position (P2).

8. The wall mounted training arrangement (1) according to any one of claims 6 to 7, wherein the wall mounted training arrangement (1) is configured to unfold to the second unfolded position (P2) through an unfolding movement which is initiated by pivoting the two floor supports (13) relative the first rod pair (11) and/or second rod pair (12), so that the second end (132) rotates towards the wall and the first end (131) rotates away from the wall.

9. The method (S0) for unfolding a wall mounted training arrangement (1) from a folded position (P0) for storage into a first unfolded position (P1) for training, wherein the wall mounted training arrangement (1) comprises a first rod pair (11) and a second rod pair (12) pivotably attached to the wall and pivotably attached to two floor supports (13) comprising a first end (131) and a second end (132), the first end (131) being above the second end (132) in the folded position (P0), the method comprising the simultaneous steps of:

pivoting (S1) the floor supports (13) relative the first rod pair (11) and the second rod pair (12) while the first (131) ends and the second ends (132) move away from the wall, the first ends (131) being kept above the second ends (132), and
pivoting (S2) the first rod pair (11) and the second rod pair (12) so that the floor supports (13) move away from the wall into a floor contacting position which places (S3) the second end (132) of the floor supports (13) on the floor.

10. The method (S0) for unfolding a wall mounted training arrangement (1) according to claim 15, further comprising the step of unfolding the wall mounted training arrangement from a folded position (P0) for storage into a second unfolded position (P2) for training, including the simultaneous steps of:

pivoting (S1) the floor supports (13) relative the first rod pair (11) and relative the second rod pair (12) in a rotational direction where the first end (131) rotates away from the wall and the second end (132) rotates towards the wall, and
pivoting (S2) the first rod pair (11) and second rod pair (12) so that the floor supports (13) move away from the wall into a floor contacting position which places (S3) the first end (131) of the floor supports (13) on the floor.

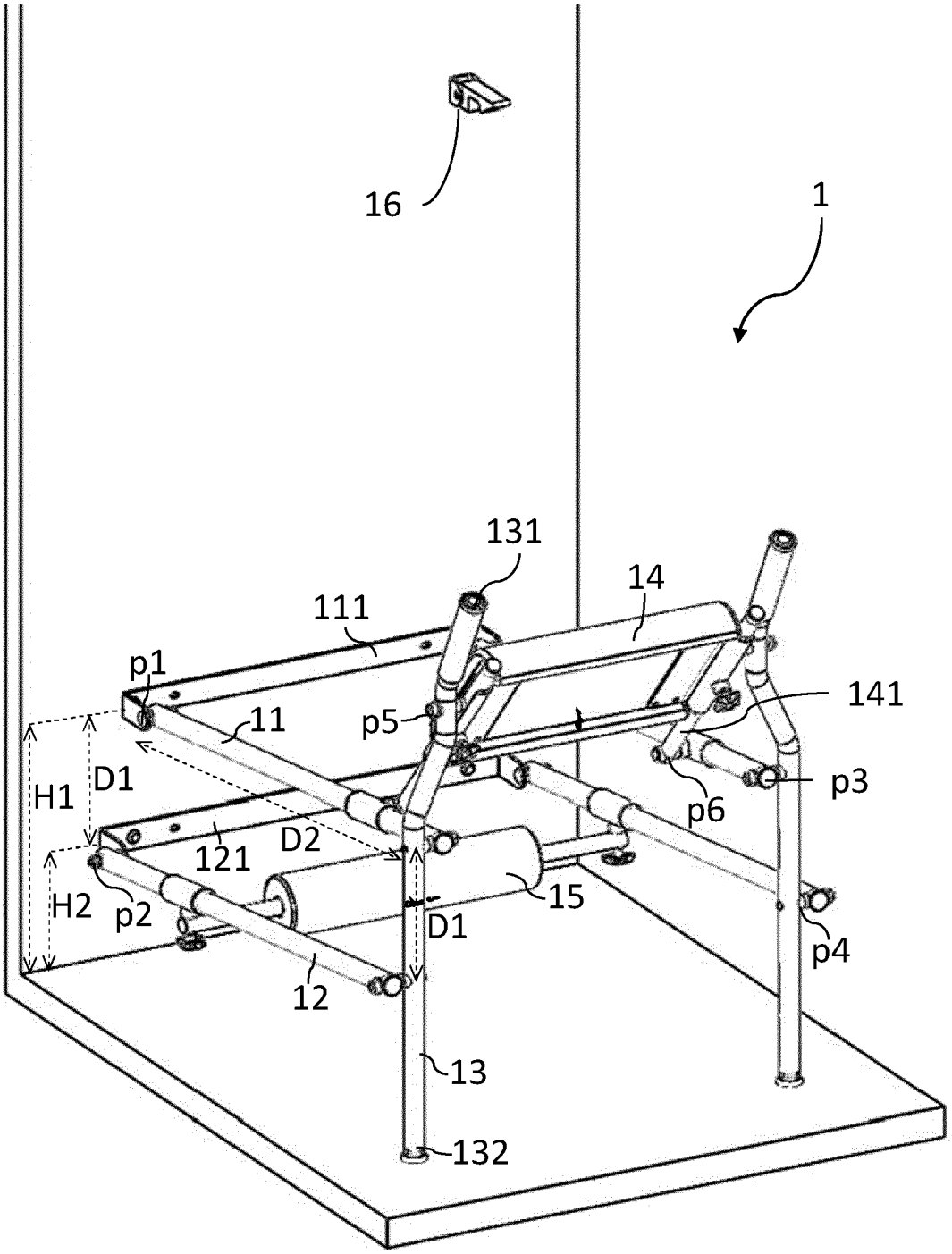
16
1
131
14
111
p1
141
11
p5
H1
D1
p3
p6
121
D2
H2
p2
15
D1
p4
12
13
132

Fig. 1

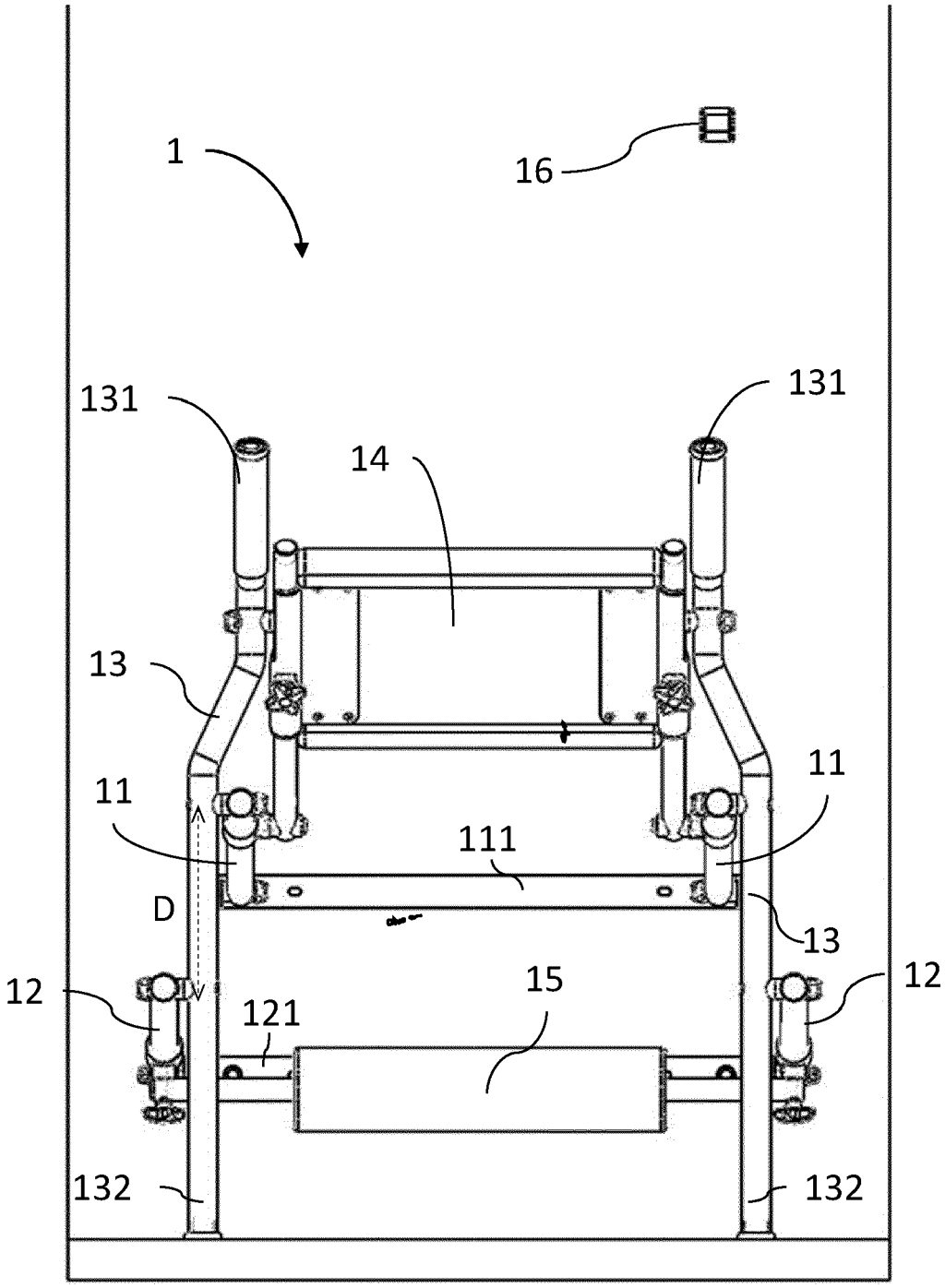

Fig. 2

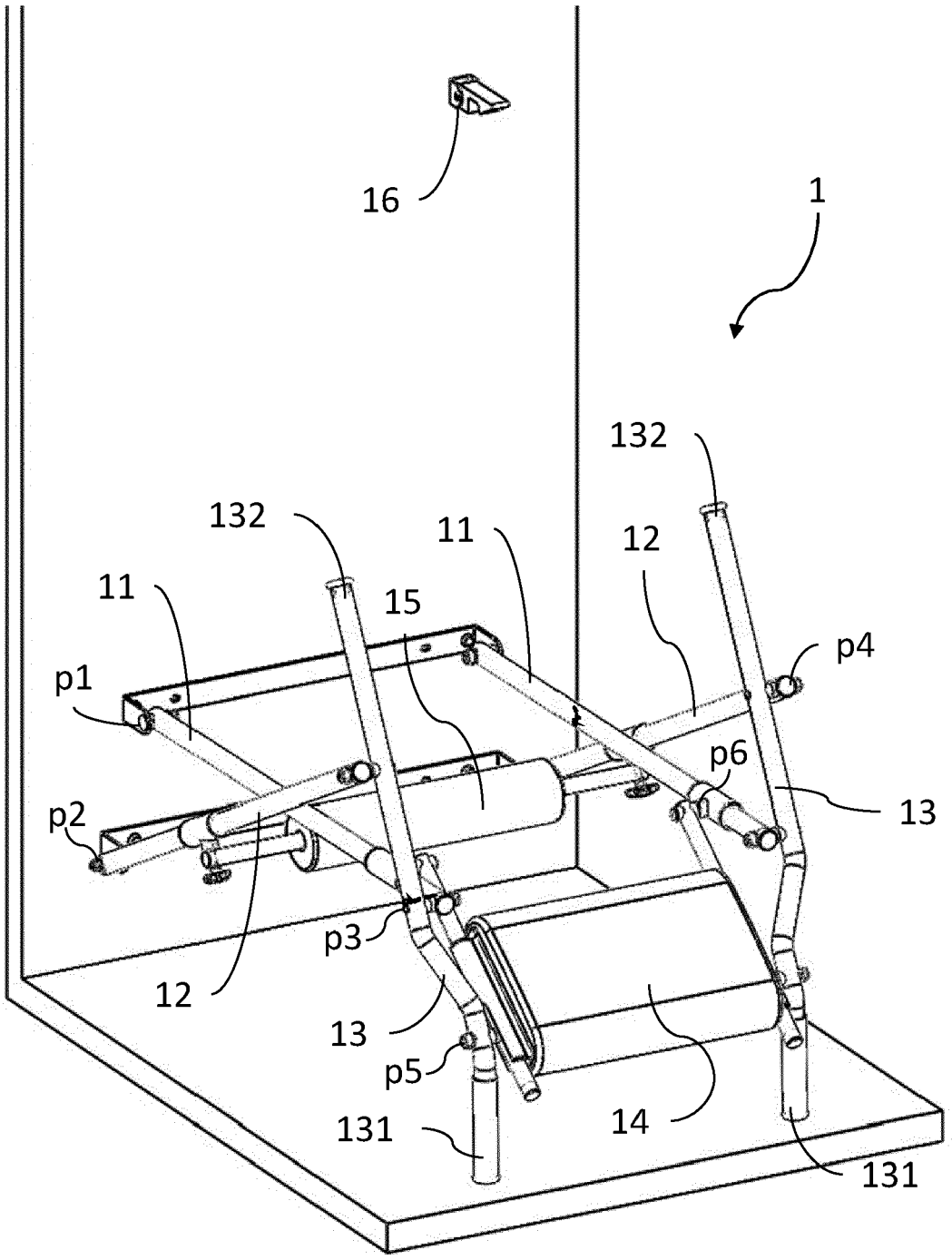

Fig. 3

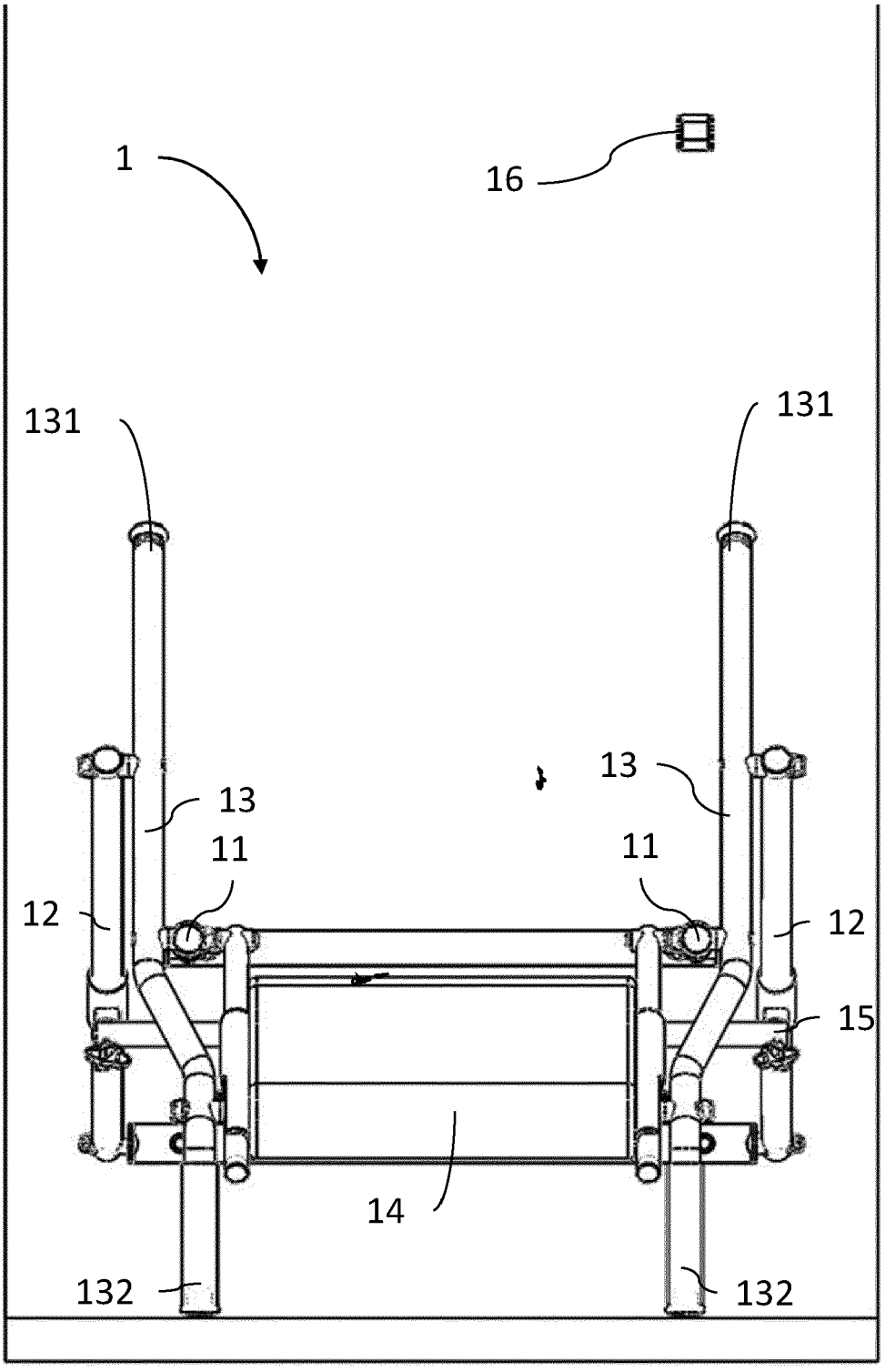

Fig. 4

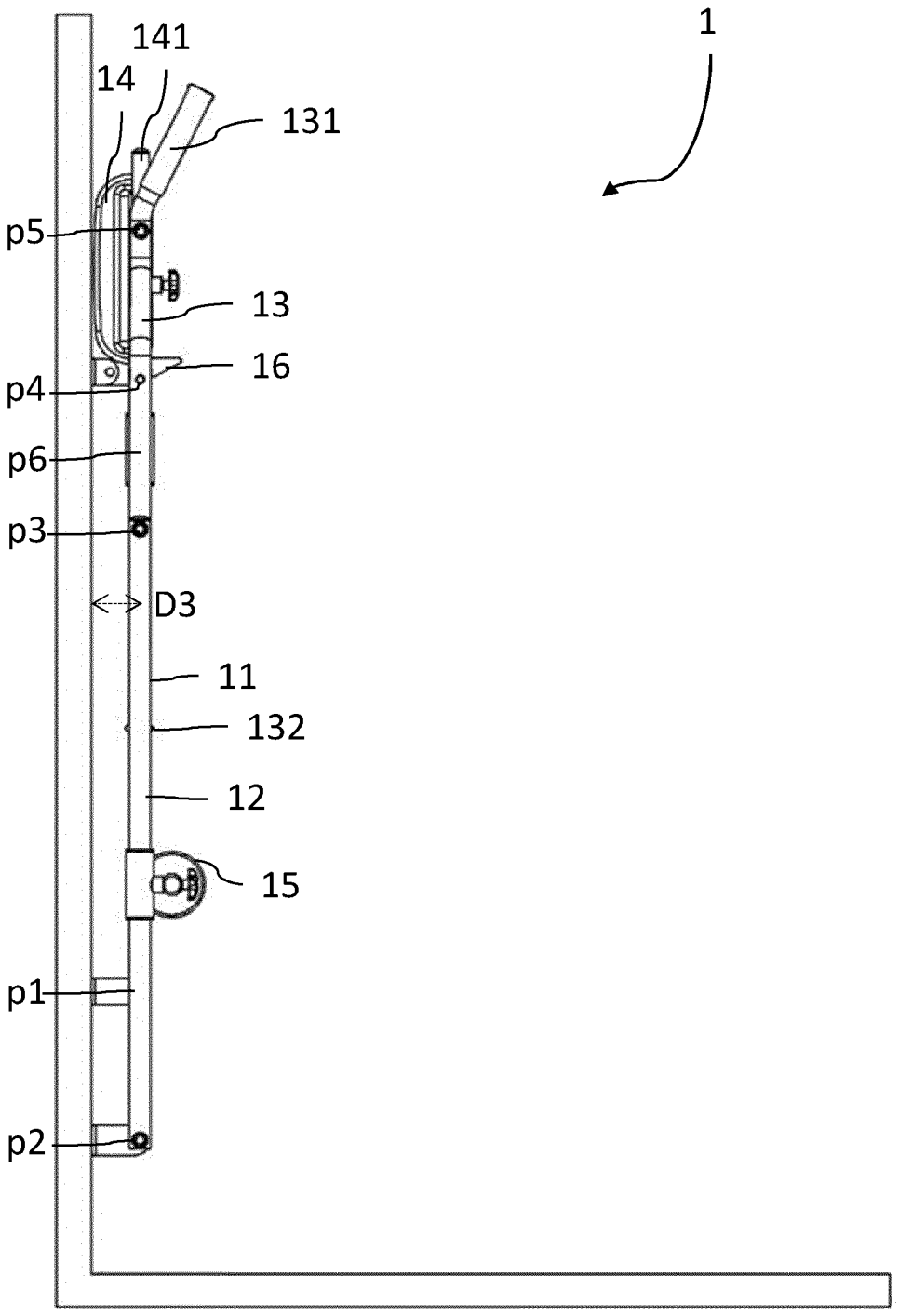

Fig. 5

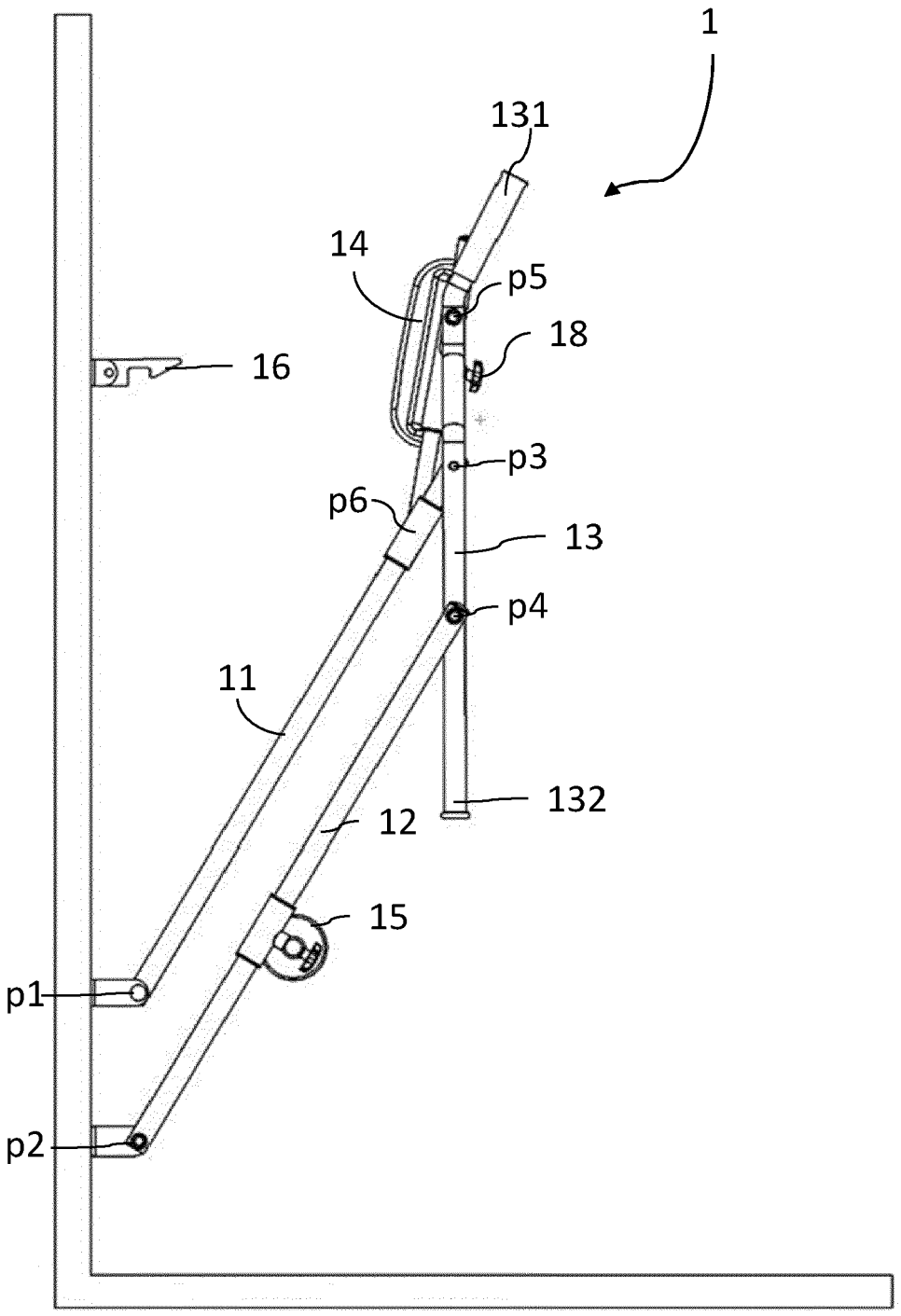

Fig. 6

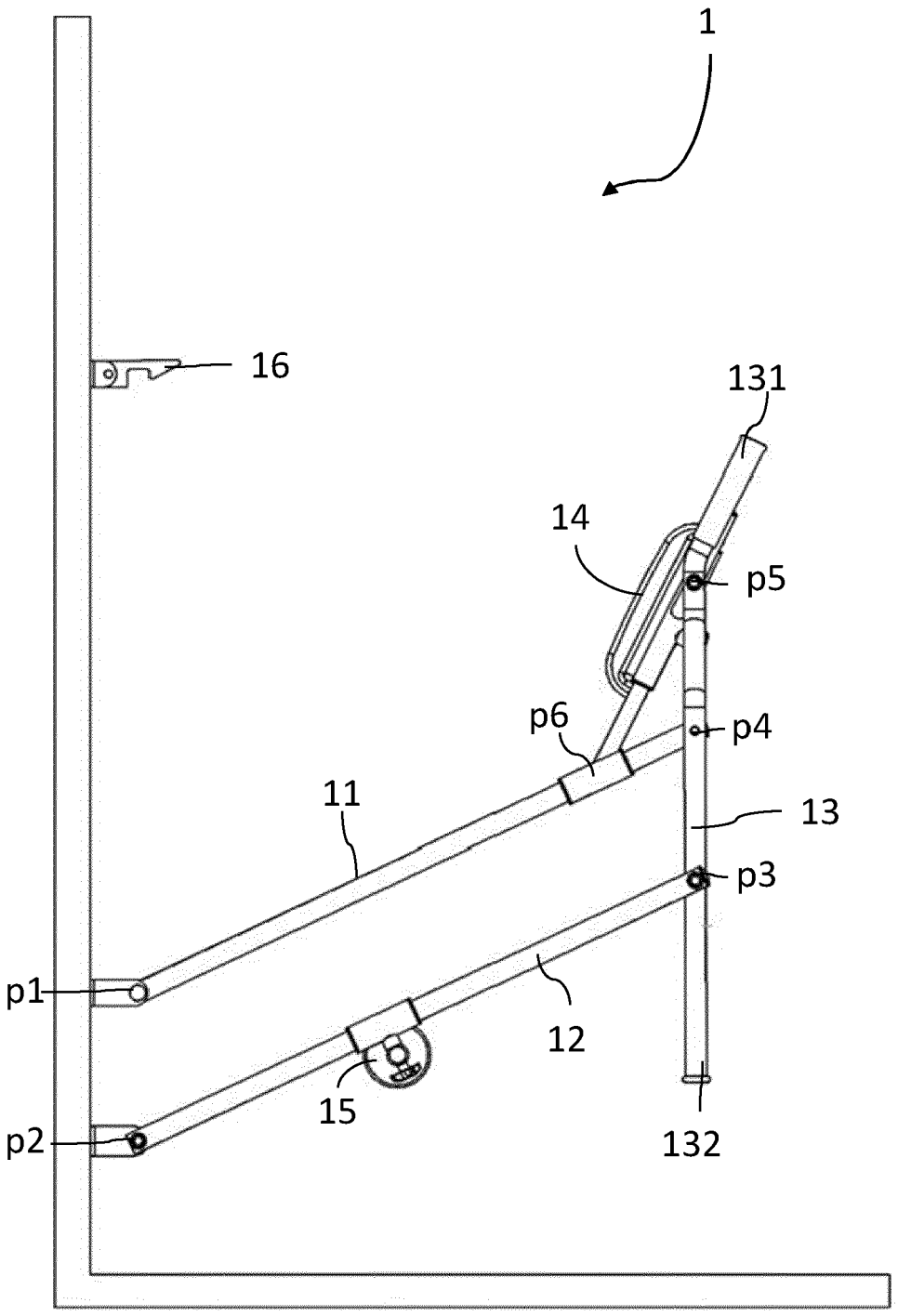

Fig. 7

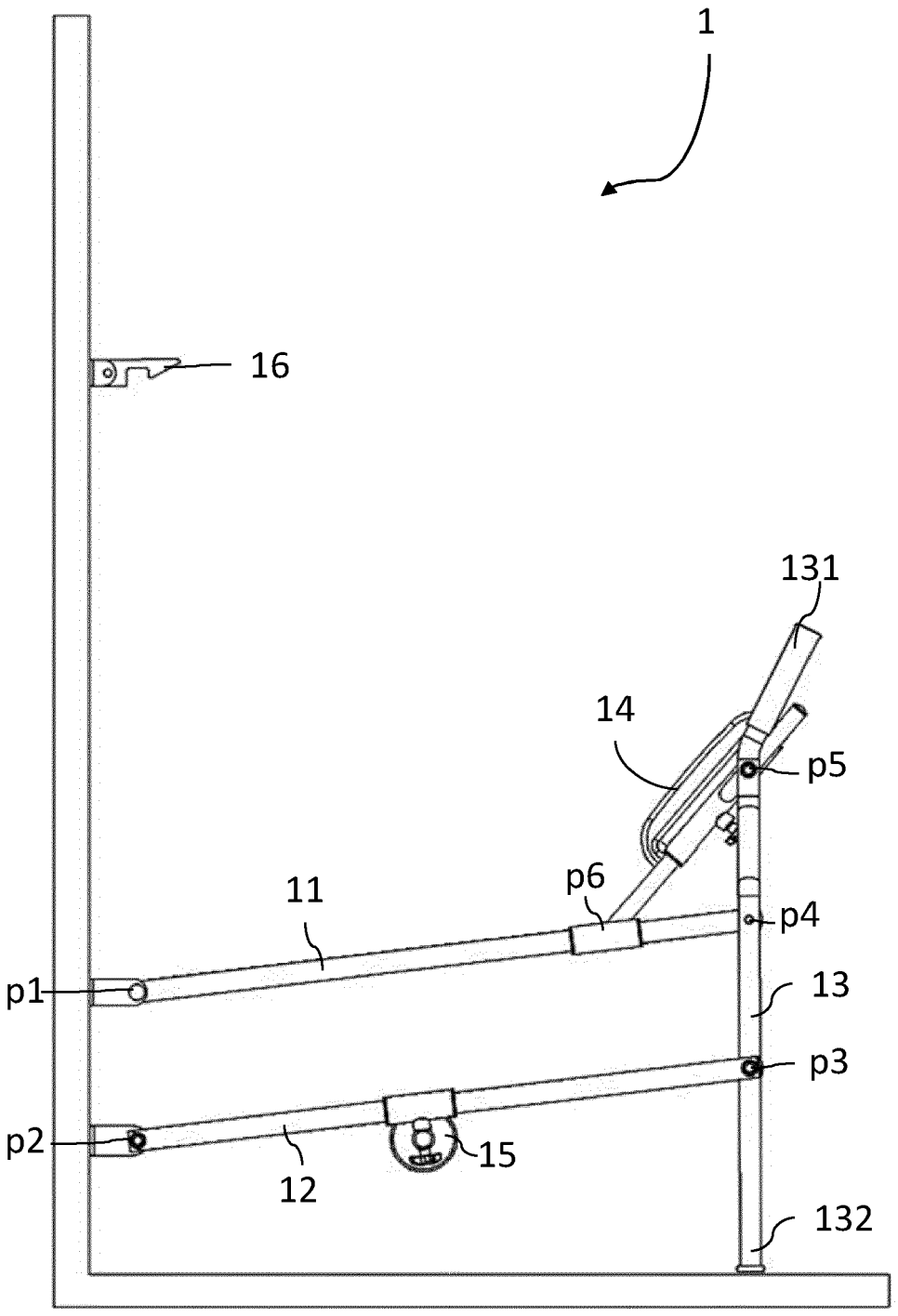

Fig. 8

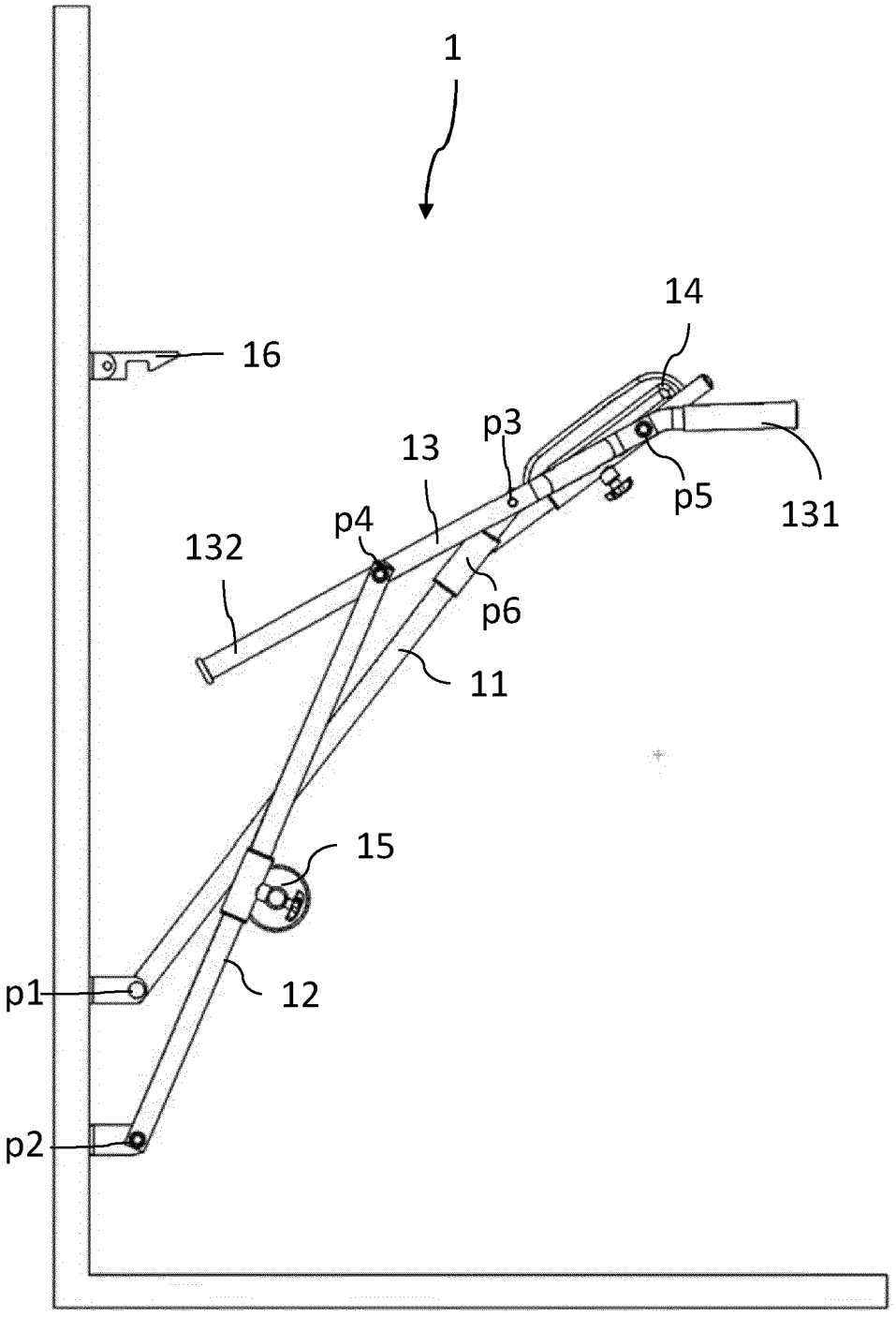

Fig. 9

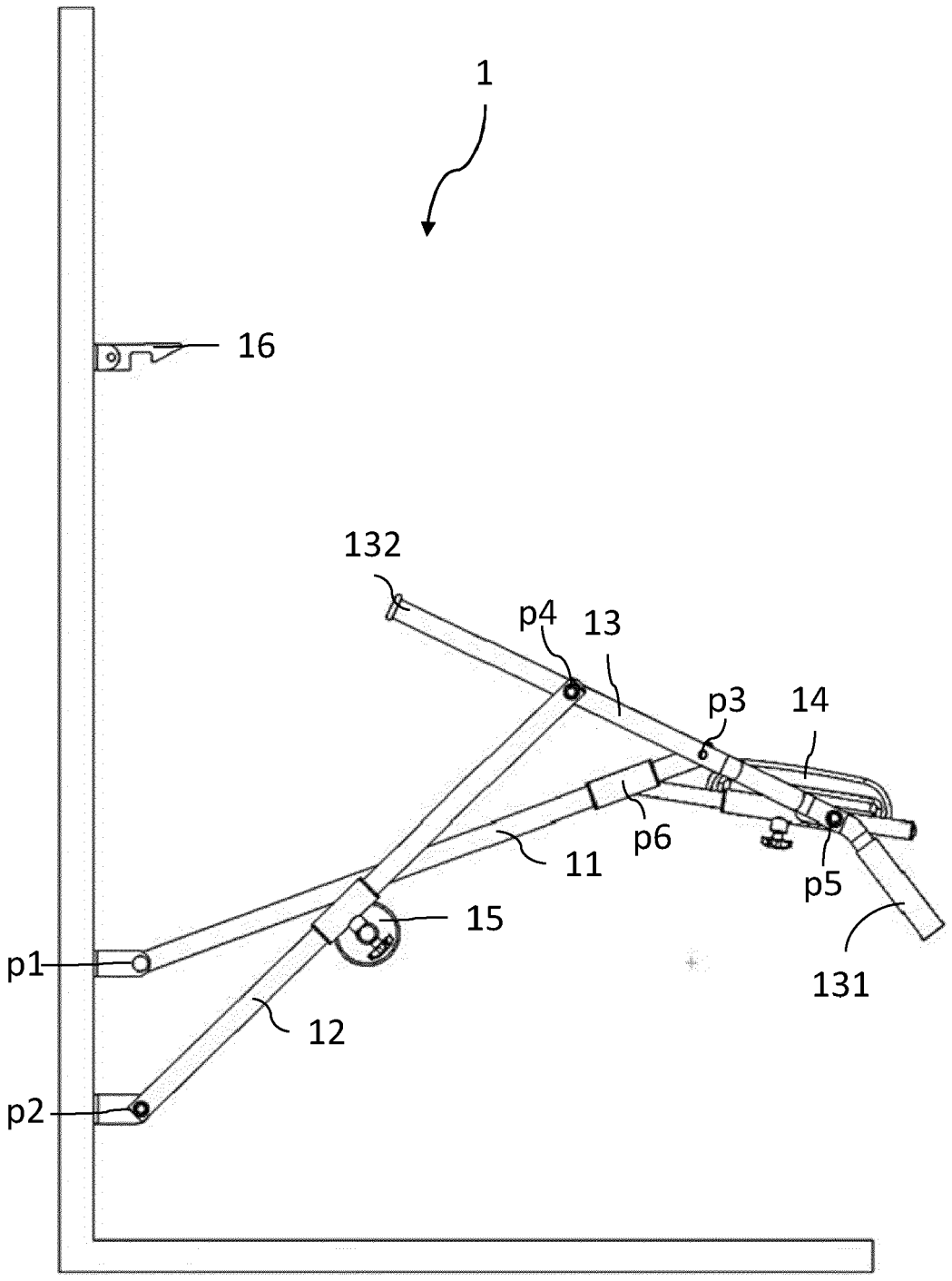

Fig. 10

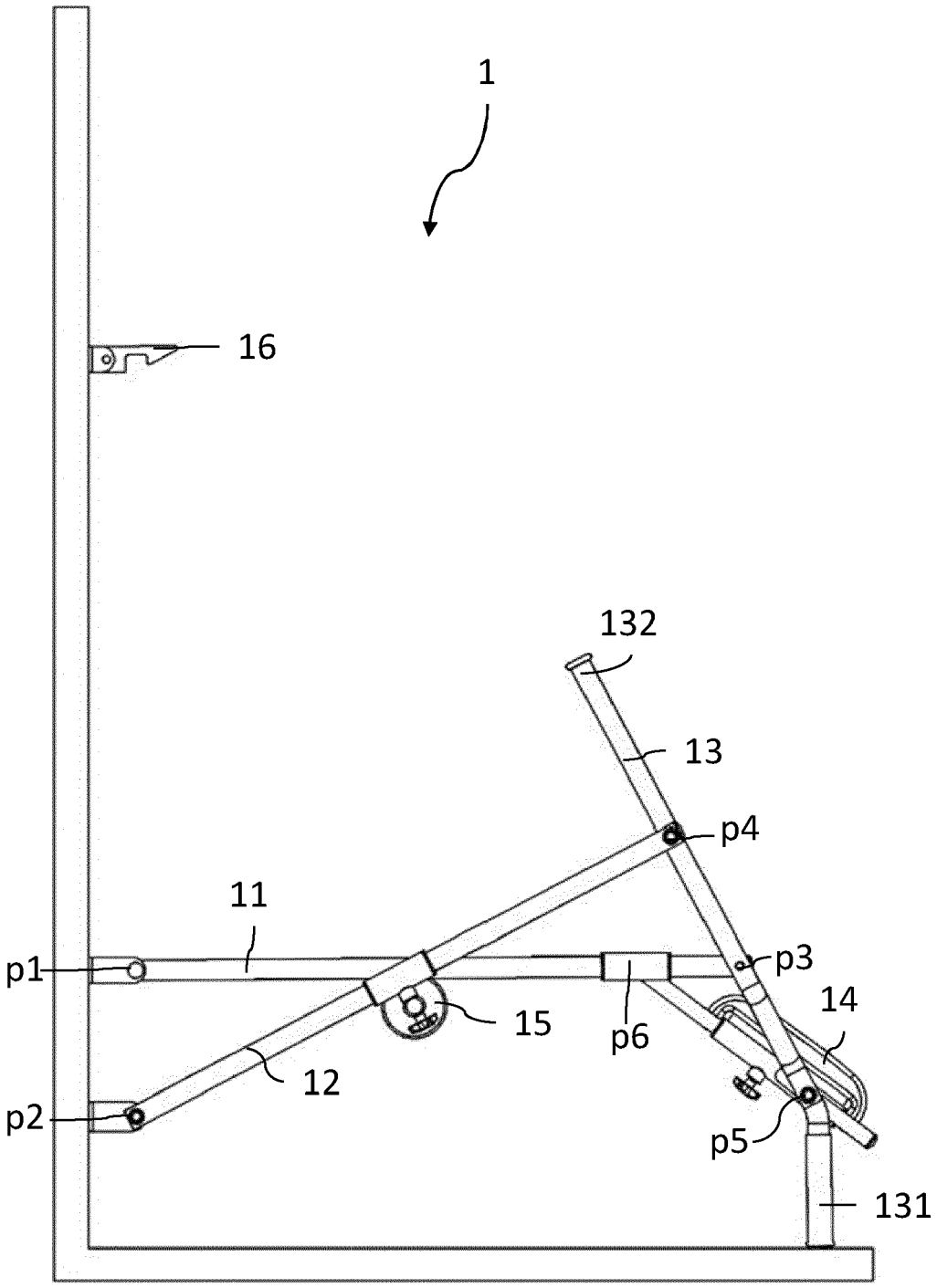

Fig. 11

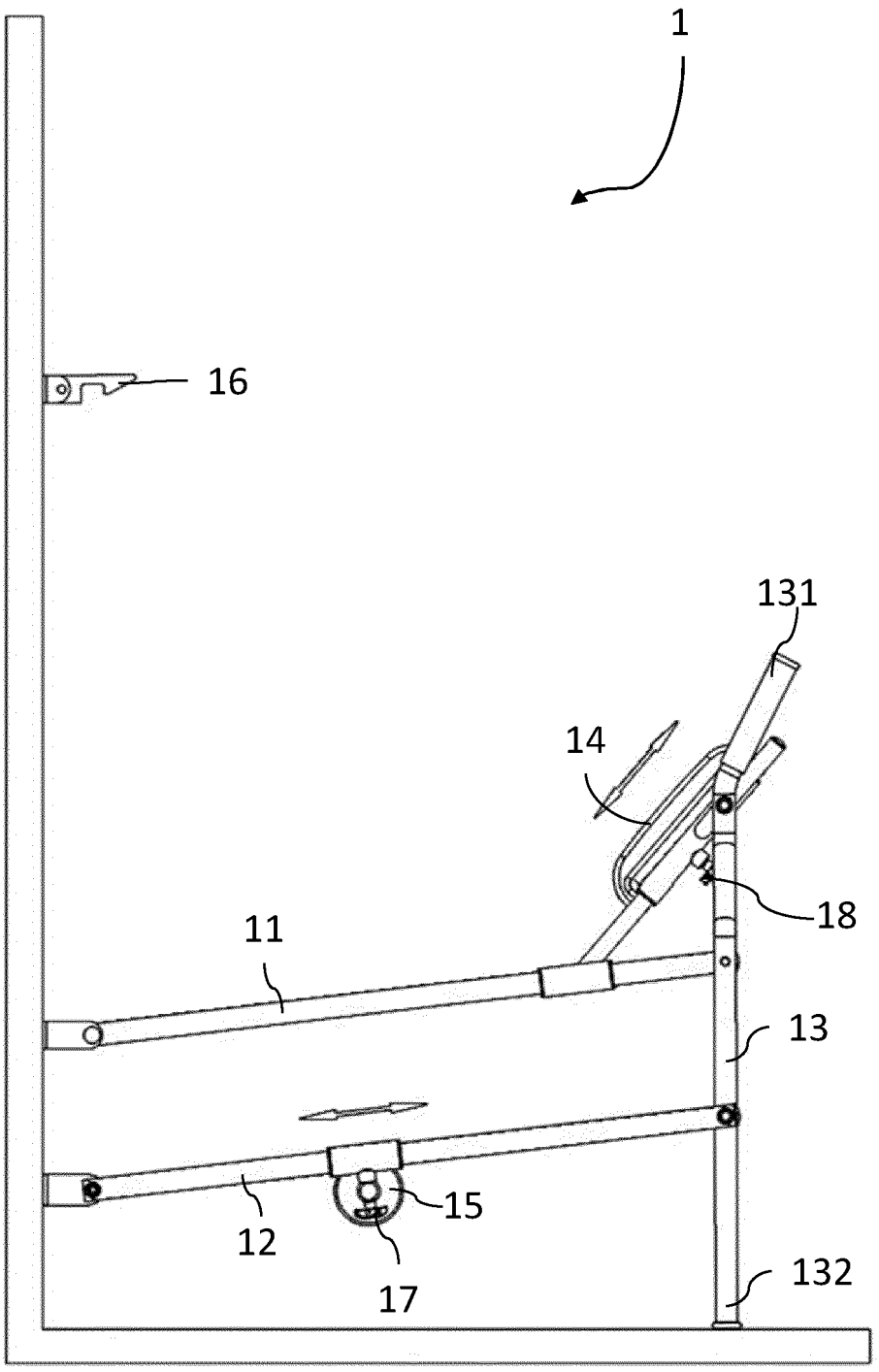

Fig. 12

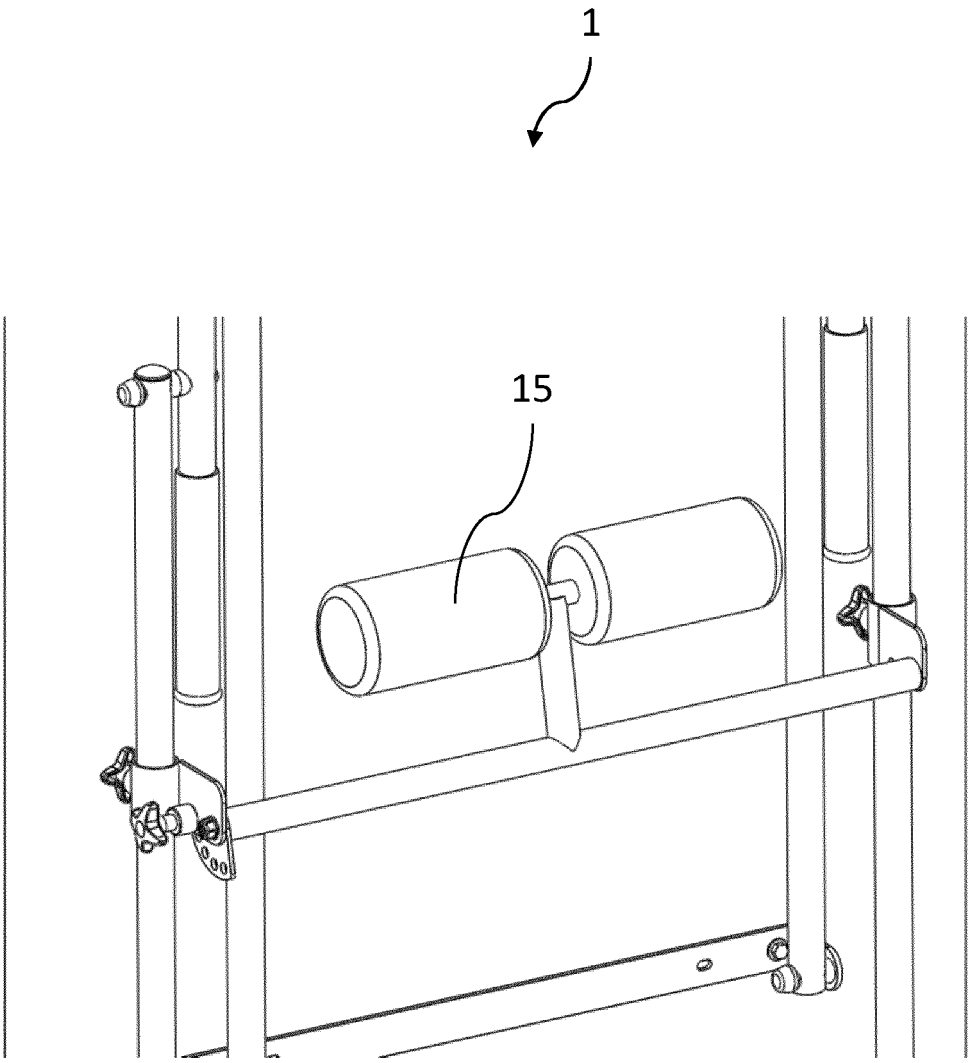

Fig. 13

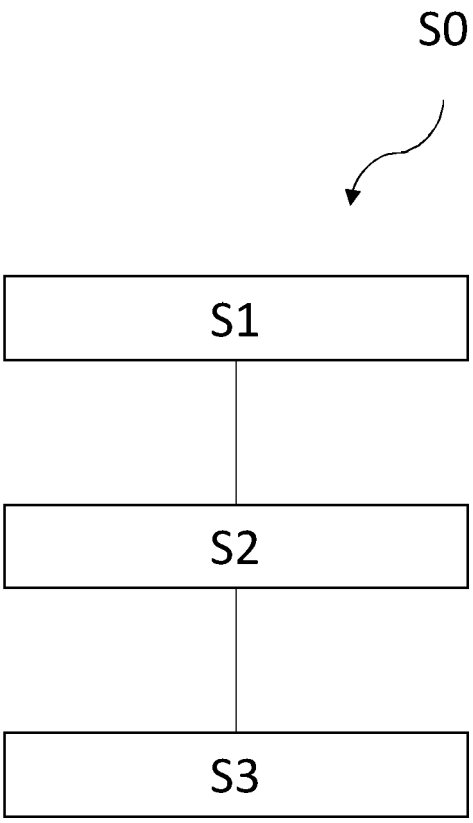

Fig. 14

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EUROPEAN SEARCH REPORT

Application Number
EP 23 21 8121

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2020/147445 A1 (ANDERSON BRANDON V [US] ET AL) 14 May 2020 (2020-05-14)	1-5,9	INV.
A	* figures 1-4 *	6-8,10	A63B21/068
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			A63B21/02
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	* the whole document *		A63B21/00

TECHNICAL FIELDS SEARCHED (IPC)

A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	2 May 2024	Lundblad, Hampus

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 23 21 8121

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02-05-2024

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