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HAND AND FOOT EXERCISING DEVICE

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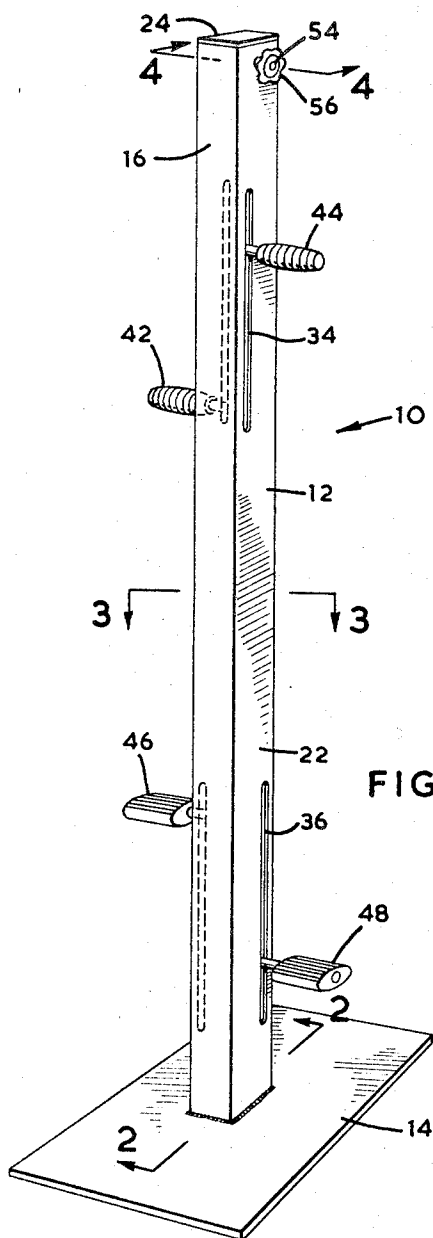


FIG. 1

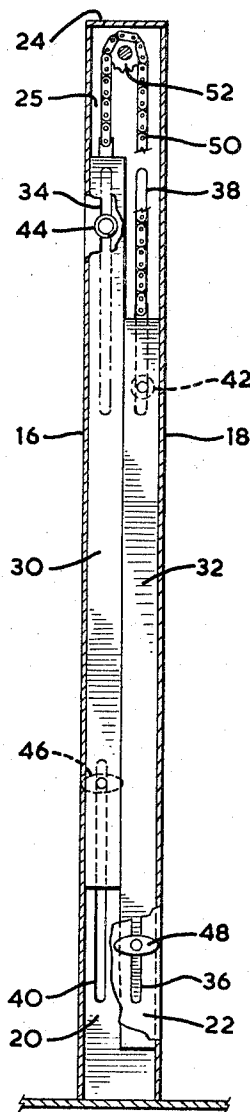


FIG. 2

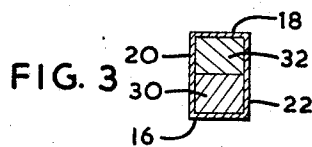


FIG. 3

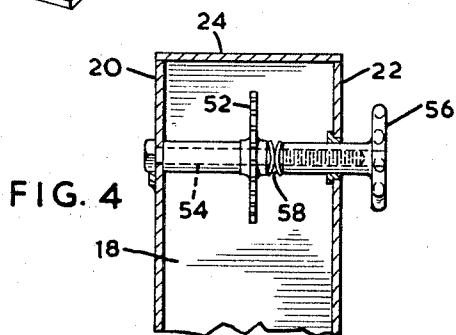


FIG. 4

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HAND AND FOOT EXERCISING DEVICE

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This invention relates to an exercising device.

In particular this invention relates to an exercising device which is adapted to provide co-ordinated leg and arm exercises.

Various types of exercising devices such as bicycle and rowing devices are well known and both of these devices are commonly used in gymnasiums and private recreation rooms and they provide a form of exercise which can be carried out indoors. The general need for an improvement in the physical fitness of our present society is well known and this can best be achieved by providing a variety of devices designed to provide various exercising movements.

It is an object of the present invention to provide an exercising device which co-ordinates the leg and arm movements to simulate a climbing action.

It is a further object of this invention to provide an exercising device which is provided with handles and foot pedals which are adapted to move relative to one another to provide the exercising motion.

It is a still further object of this invention to provide an exercising device as previously described wherein the force required to complete the exercising movement is adjustable.

With these and other objects in view the invention generally comprises an exercising device comprising a vertically extending tubular frame member having at least two reciprocating support members adapted to reciprocate therein. Connecting means is provided to extend between the two reciprocating support means and to interconnect them such that movement of one of the support members relative to the frame member causes movement of the other of the support members. A handle and a foot pedal is carried by each of the support members and extend horizontally outwardly from opposite sides of the frame member.

The invention will be more clearly understood after reference to the following detailed specification read in conjunction with the drawings wherein:

FIGURE 1 is a pictorial view of the exercising device according to an embodiment of the present invention.

FIGURE 2 is a sectional view taken along the line 2-2 of FIGURE 1.

FIGURE 3 is a sectional view taken along the line 3-3 of FIGURE 4.

FIGURE 4 is a partial sectional view taken along the line 4-4 of FIGURE 1.

With reference to FIGURE 1 the reference numeral 10 refers generally to an exercising device according to an embodiment of the present invention.

The device comprises a vertically extending frame member 12 which is rigidly carried by a base member 14. The base member 14 is of sufficient area to enable the device to be stable when supporting the weight of a man.

The vertically extending tubular frame member 12 is preferably made from steel and is in the form of a hollow rectangular tube having a front wall 16, back wall 18 and opposed side walls 20 and 22. A top plate 24 is provided to close the upper end of the rectangular tubular frame member 12.

Reciprocating support members 30 and 32 are adapted to fit within the inner chamber 25 of the frame member 12 in a close fitting sliding relationship. The support

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members 30 and 32 take up equal portions of the chamber 25 and are arranged such that the member 30 is located adjacent the front wall 16 and the member 32 is located adjacent the back wall 18 of the support frame 12.

With reference to FIGURE 1 it will be seen that the side wall 22 is formed with two longitudinally extending slots 34 and 36 which provide access to the inner support members 30 and 32. The slot 34 is formed toward the upper end of the frame 12 and adjacent the front wall 16 and the slot 36 is formed toward the lower end of the frame 12 and adjacent the back face 18. The arrangement of these slots is such that the slot 34 opens into the chamber 24 to expose the support member 30 and the slot 36 exposes the support member 32. Similar slots 38 and 40 are formed in the opposite side wall 20, the slot 38 being formed toward the upper end of the frame and adjacent the back wall 18 and the slot 40 being formed toward the lower end of the frame and adjacent the front wall 16. The slot 38 provides access to the support member 32 and the slot 40 provides access to the support member 30.

Handles 42 and 44 are rigidly connected to the support members 30 and 32 respectively and are free to slide within the slots 38 and 34 respectively. Foot pedals 46 and 48 are rigidly connected to the support members 30 and 32 respectively and are free to slide within the grooves 40 and 36 respectively. From the foregoing it will be seen that the support member 30 carries the foot pedal 46 and the handle 44 and the support member 32 carries the foot pedal 48 and the handle 42, consequently when the support member 30 is moved both the handle 44 and the foot pedal 46 will be moved simultaneously and similarly when the support member 32 is moved both the handle 42 and the foot pedal 48 will be moved simultaneously.

The support member 30 is connected to the support member 32 by means of a link chain 50 which passes over a sprocket 52. With reference to FIGURE 5 it will be seen that the sprocket 52 is rotatably carried by the shaft 54 which is rigidly secured to the frame. The force required to rotate the sprocket 52 is adjustably controlled by means of the adjustment handle 56 and spring 58.

When in use the operator is supported with one foot on each pedal and one hand on each handle. When the handles and foot pedals are arranged as shown in FIGURE 1, a downward force applied to the foot pedal 46 and to the handle 44 causes the foot pedal 46 and handle 44 to move downwardly. As both the foot pedal 46 and the handle 44 are rigidly connected to the support member 30 then the support member 30 moves downwardly and as the support member 30 is connected to the support member 32 by means of the chain 50 downward movement of the support member 30 causes upward movement of the support member 32. Upward movement of the support member 32 in turn causes upward movement of the foot pedal 48 and the handle 42. The extent of downward movement of the support members 30 and 32 is preferably determined by the point at which the lower end of the support member makes contact with the base 14. From the foregoing it will be apparent that when the left foot is moving downwardly the right hand is moving downwardly and the left hand and right foot are moving upwardly. The operation of the device simulates the action of climbing and provides an excellent form of exercise.

The amount of force required to cause relative movement between the two support members is adjustable by means of the adjustment handle 56 and adjustment spring 58.

Various modifications and additions to the present invention will be apparent to those skilled in the art. It will be apparent that alternative types of tension applying devices may be employed to regulate the force required to cause relative movement between the support members. It will also be apparent that the present device may be provided with a counting mechanism which will record the number of cycles of the exercising device carried out by an operator.

In a further modification of the present invention four vertical support members may be employed, one for each handle and one for each foot pedal. Suitable connecting means can easily be arranged to provide the required combination between the leg movements and the arm movements.

I claim:

1. An exercising device comprising, a vertically extending frame member, at least two reciprocating support members slidably carried by said frame member, connecting means adapted to extend between and connect said two reciprocating support members such that movement of one of said support members relative to said frame member causes movement of the other of said support members, a handle and a foot pedal carried by each of said support members, the handle and foot pedal for each particular support member extending horizontally outwardly from opposite sides of said frame member such that one foot pedal and one handle slide in a direction opposite to the other when said support members slide relative to one another.

2. An exercising device comprising, a vertically extending tubular frame, two reciprocating support members slidably located within said tubular member and adapted to slide relative to one another, connecting means adapted to extend between and connect said reciprocating support members such that movement of one of said support members relative to said frame member causes movement of the other of said support members, two vertically extending handle slots formed in said frame member adjacent the upper end thereof, said slots being arranged on opposite sides of said frame member, two vertically extending foot pedal slots formed in said frame member adjacent the lower end thereof, said slots being arranged on opposite sides of said frame member, a handle extending through each of said handle slots and connected to each of said support members, a foot pedal extending through each of said foot pedal slots and connected to each of said support members, said foot pedals and said handles being arranged such that one foot pedal and one handle slide in a direction opposite to the other when said support members slide relative to one another.

3. An exercising device comprising, a vertically extending tubular frame, a first reciprocating support member and a second reciprocating support member, said support members being slidably located within said tubular frame, connecting means adapted to extend between and connect said reciprocating support members such that movement of one of said support members relative to said frame causes movement of the other of said support members, a first vertically extending handle slot formed in a first side of said tubular frame and communicating with said first reciprocating support member, and a second vertically extending handle slot formed in a second side of said tubular frame and communicating with said second reciprocating support member, said first side of said tubular frame being substantially opposite said second side, a first vertically extending foot pedal slot formed in said first side of said tubular frame and communicating with said second reciprocating support member and a second vertically extending foot pedal slot formed in said second side of said tubular frame and

communicating with said first reciprocating support member, a first handle extending through said first handle slot and connected to said first reciprocating support member, and a second handle extending through said second handle slot and communicating with said second reciprocating support member, a first foot pedal extending through said first foot pedal slot and connected to said second reciprocating support member and a second foot pedal extending through said second foot pedal slot and connected to said first reciprocating support member, said handles and said foot pedals being arranged such that said first handle and said second foot pedal move with said first reciprocating support member and said second handle and said first foot pedal move with said second reciprocating support member in use.

4. An exercise device as claimed in claim 1, wherein said connecting means comprises a sprocket rotatably carried by said frame adjacent the upper end thereof, a chain adapted to extend over said sprocket, one end of said chain being secured to one of said support members and the other end of said chain being secured to the other of said support members.

5. An exercising device as claimed in claim 1, including means adapted to vary the load required to cause movement of said reciprocating support members.

6. An exercising device as claimed in claim 2 wherein said tubular frame member is substantially rectangular in section.

7. An exercising device as claimed in claim 1, including a base member adapted to support said frame member in a vertical plane.

8. An exercise device as claimed in claim 2 wherein said connecting means comprises a sprocket rotatably carried by said frame adjacent the upper end thereof, a chain adapted to extend over said sprocket, one end of said chain being secured to one of said support members and the other end of said chain being secured to the other of said support members.

9. An exercise device as claimed in claim 3 wherein said connecting means comprises a sprocket rotatably carried by said frame adjacent the upper end thereof, a chain adapted to extend over said sprocket, one end of said chain being secured to one of said support members and the other end of said chain being secured to the other of said support members.

10. An exercising device as claimed in claim 2 including means adapted to vary the load required to cause movement of said reciprocating support members.

11. An exercising device as claimed in claim 3 including means adapted to vary the load required to cause movement of said reciprocating support members.

12. An exercising device as claimed in claim 3 wherein said tubular frame member is substantially rectangular in section.

13. An exercising device as claimed in claim 2 including a base member adapted to support said frame member in a vertical plane.

14. An exercising device as claimed in claim 3 including a base member adapted to support said frame member in a vertical plane.

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