July 28, 1970 H. SCHAEVITZ 3,521,881

EXERCISING FRAME FOR STRENGTHENING THE SPINE

Filed March 16, 1967 2 Sheets-Sheet 1

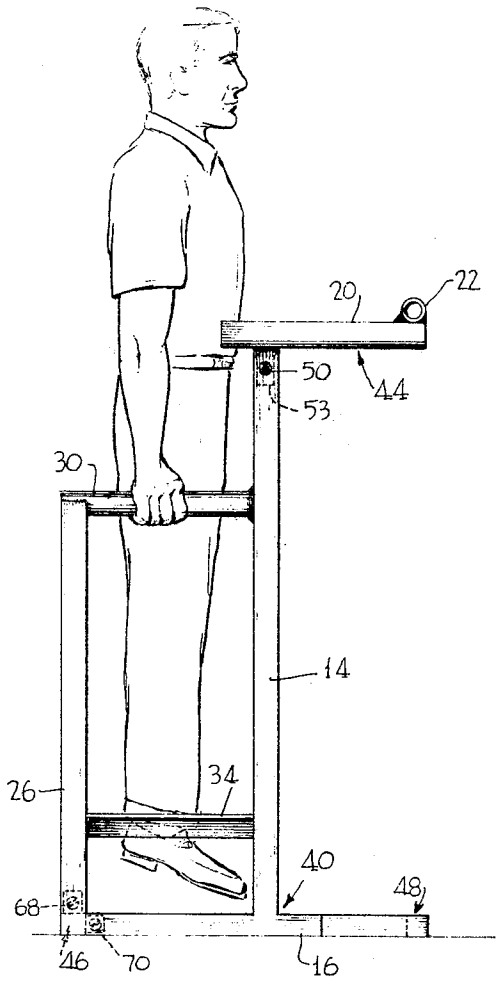

FIG. 2

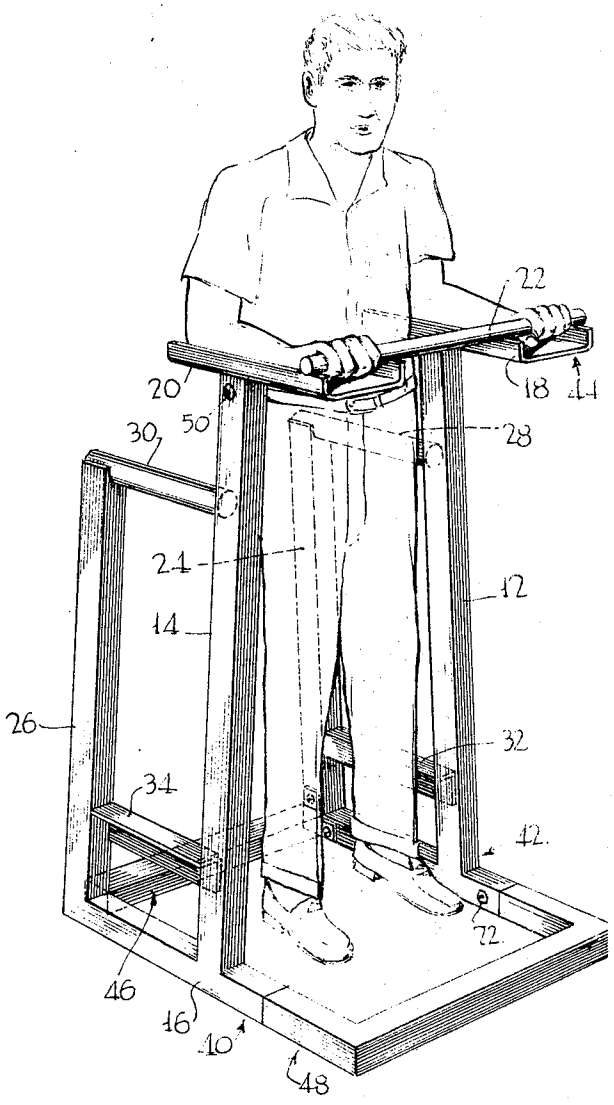

FIG. 1

INVENTOR.
Herman Schaevitz
BY Edward M. Farrell
ATTORNEY

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EXERCISING FRAME FOR STRENGTHENING THE SPINE

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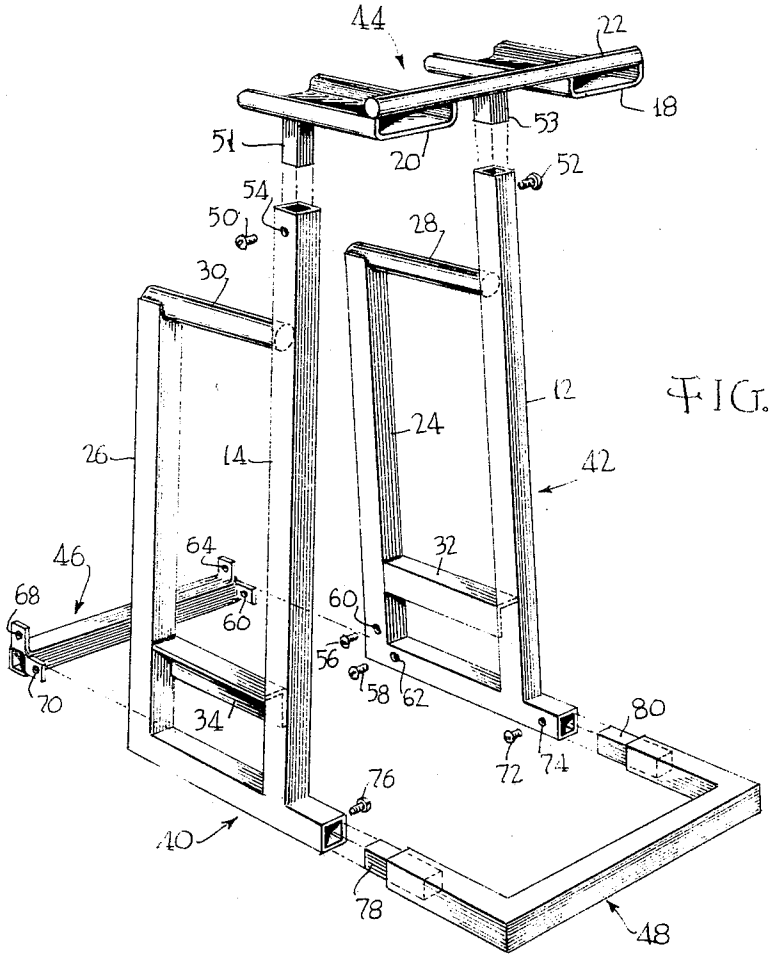

FIG. 3

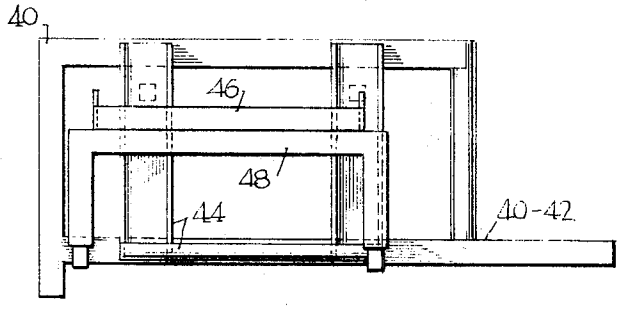

FIG. 4

INVENTOR.

BY Herman Schaevitz

Edward M Farrell

ATTORNEY

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EXERCISING FRAME FOR STRENGTHENING THE SPINE

Herman Schaevitz, 226 Harding Ave., Westmont, N.J. 08108

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U.S. Cl. 272—63 2 Claims

ABSTRACT OF THE DISCLOSURE

A frame device permitting a person to perform exercises to help strengthen his spine. The frame has a horizontal hand-gripping bar extending between the forward ends of a pair of horizontal arm rests allowing the user to project his body off the ground while resting his arms on the arm rests and gripping the bar with the hands.

This invention provides a convenient compact exercise device which enables a person to take exercises which tend to stretch, strengthen and straighten his spinal column.

There are many people suffering from minor spinal disorders which normally may not be serious enough to require the attention of an orthopedic surgeon but which, nevertheless, are discomforting. For example, many persons suffer from slight spinal curvature. This is the curving of the spine too much backward or forward, too much to one side or the other, called scoliosis. This and other spinal troubles are aggravated as a result of poor posture and failure to take proper exercises.

As is known, the spinal column comprises a series of connecting bones forming the backbone. The series of vertebrae are connected by ligaments and separated by more or less elastic intervertebral fibrocartilages. The spinal column protects the spinal cord which serves as the pathway for nervous impulses to and from the brain.

Many minor troubles relating to the spine may be eliminated or at least minimized through proper exercises. Unfortunately, it is difficult for a doctor to prescribe proper exercises for spinal disorders because special equipment would generally be required. Patients have been sometimes told to hold on to the top of a door with their feet free of the ground to provide some exercise for the spine. Because many of the people suffering from spinal disorders are in the middle age or old age groups, it is essential that the devices involved not require excessive or strenuous maneuvers to perform the exercises reuired.

As is well known, there are numerous exercise devices being marketed for a wide variety of purposes. In the main, such devices have been found in gymnasiums where large working areas are available. Most such devices have been cumbersome and expensive and generally not suitable for use in a home or office, where the average person suffering from spinal trouble would have to take such exercises.

As a result, many people who normally are desirous of taking certain exercises to relieve minor spinal or back troubles have neglected to take such exercises because they lack the time to leave their homes or office and do not have the proper equipment.

It is an object of this invention to provide a novel exercise device to enable a person to permit his body to hang free in a vertical position with his feet free of the ground causing his spine to become stretched.

It is a further object of this invention to porvide an improved exercise device to enable a person to easily raise himself off the ground with a minimum amount of exertion and then permit his body to be vertically suspended

with his feet free of the ground thereby causing his spine to become stretched.

It is still a further object of this invention to provide an improved exercise device for improving the spinal condition of a person which is relatively small and compact for use in a home or office.

It is still a further object of this invention to provide an improved exercise device for improving the spinal condition of a person which may be easily assembled and disassembled for storage or packaging in a relatively small space.

It is still a further object of this invention to provide an improved exercise device for improving the spinal condition of a person which may be manufactured and sold at a price far below the cost of most equipment made for similar purposes found in gymnasiums.

In accordance with the present invention, an exercise device for enabling a person to take exercises to help his spinal condition is provded. The device is small, portable and easly disassembled for convenient packaging and storage. The device perimts a person to raise or project himself off the ground without any great physical exertion. The device then enables him to hold himself with his feet free of the ground with his body hanging freely in a vertical position thereby causing his spine to become straightened or stretched.

Other objects and advantages of the present invention will be apparent and suggest themselves to those skilled in the art from a reading of the following specification and claims, in conjunction with the accompanying drawing, in which:

FIG. 1 is a side view of an exercise device in use by a person in accordance with the present invention;

FIG. 2 is a perspective view of the device illustrated in FIG. 1 use by a person in a different manner than illustrated in FIG. 1;

FIG. 3 is an exploded view illustrating the various parts of the device of FIGS. 1 and 2, and

FIG. 4 is a view of the device in a disassembled form arranged for packing or storage.

Referring to the drawings, FIG. 3 illustrates the present invention as comprising five parts as they may be made by a manufacturer and received by a purchaser. These parts may be welded or otherwise mechanically interconnected in the manner illustrated. The exercise device comprises members **40** and **42** which provide the vertical elements and part of the base support for the device, a top arm support and hand grip member **44**, a rear member **46** and a front member **48**. When assembled, these parts or members make up the device illustrated in FIGS. 1 and 2.

Disregarding for purposes of explanation the breakdown of the members illustrated in FIG. 3, the exercise device will be described as if it were welded into an integral unit, which it could be.

Referring to FIGS. 1 and 2, the exercise device includes a pair of vertical members **12** and **14** attached to a base member **16**. The base member may comprise four rectangular elements to provide the ground support for the exercise device.

A pair of horizontal arm rest members **18** and **20** are connected to the ends of the vertical members **12** and **14**, respectively. These members may be rectangular, semicircular or any other suitable shape for receiving the arms of a person using the exercise device as is illustrated in FIG. 1. A horizontal bar member **22** is connected between the arm rest members **18** and **20** to form a hand gripping element.

A pair of vertical brace members **24** and **26** are also connected to the base member **16** in parallel relationship with the vertical members **12** and **14**. The brace members **24** and **26** are shorter than the members **12** and **14**.

A pair of horizontal bar elements **28** and **30**, which may be tubular in shape, are connected from the ends of the members **24** and **26** to points intermediate the ends of the members **12** and **14**. The bar elements **28** and **30** serve as hand gripping elements when the exercise device is used in the manner illustrated in FIG. 2.

Step members **32** and **34**, which may be L shaped, are also connected from the vertical members **12** and **14** to the vertical members **24** and **26**, respectively. The step members are disposed relatively close to the ground to enable a person to step on to the exercise device and subsequently easily assume one of the positions illustrated in FIGS. 1 or 2.

In using the exercise device in the manner illustrated in FIG. 1, a person first grips the portions of the bar **22** which are disposed toward the front of the arm rest members **18** and **20** with his elbows and arms resting within the recessed areas of the arm rests. He then steps upon one or both of the step members **32** and **34** and firmly grips the member **22** in the manner illustrated. After he steps off the step members **32** and **34**, he maintains his arms in taut positions so that his entire body hangs vertically with his feet free of the ground.

As is illustrated, when the body of the person is held suspended in a vertical position free of the ground, the whole spine is put in tension with each lower portion providing additional weights for that portion above it. The straightening of the spine as illustrated is achieved in a natural manner and is not accomplished by causing a person to assume backward or unnatural positions as is the case when many conventional types of gymnasium equipment are used.

In addition to the straightening and strengthening of the spine, it is seen that the muscular tone of a person is improved as a result of the stretching involved. All this is accomplished without any great effort on the part of the person using the device.

As an alternative to the method of exercise illustrated in FIG. 2, a person may wish to perform his spine and muscular improving exercise in the manner illustrated in FIG. 2.

In this case, the person grips the horizontal members **28** and **30** and again steps on one or both of the step members **32** and **34**. After he has a firm grip on the members **32** and **34**, he then steps off the members **32** and **34** and permits his body to hang freely in the manner illustrated. He maintains his arms straight and taut to hold his body in a suspended position with his feet off the ground.

The spinal benefits from both methods illustrated are substantially the same since they both cause the spine to be stretched or straightened. The use of two different methods enables a person to vary his exercises with the same device. The different methods also permit a person to exercise different muscles in his body, notably those associated with his arms and shoulders.

The various means for interconnecting the various members described may take a variety of forms well known to those skilled in the art. The various members may be welded together or mechanically interconnected by means of nuts and bolts. One method of assembly and disassembly is illustrated in FIG. 3, to be described.

Referring to FIG. 3, as previously mentioned, the exercise device may be partly assembled by the manufacturer for convenient packing and subsequent final assembly by a purchaser. The various parts are dimensioned so that they fit together tightly to securely hold a person of better than average weight.

The members **40** and **42** are adapted to receive the top member **44** with studs **51** and **53** dimensioned to fit into the end top tubular openings. After insertion of the top member **44**, screws **50** and **52** may be inserted into apertures, with only one aperture **54** being illustrated, to securely hold the inserted member **44** in place.

The rear member **46** includes perpendicular bent portions having apertures **64**, **66**, **68** and **70** adapted to line up with apertures in the members **40** and **42**, with only the apertures **60** and **62** being illustrated. Screws **56** and **58** and two others not illustrated are used to securely hold the rear member **46** on to the members **40** and **42**.

The front member **48** includes a pair of studs **78** and **80** dimensioned to tightly fit into front tubular openings in the members **40** and **42**. After the member **48** is inserted, it is held in place by screws **72** and **76** threadedly inserted into apertures in the members **40** and **42**, with only one aperture **74** being illustrated.

The various means for interconnecting the various members may of course, as mentioned, take different forms other than those illustrated in FIG. 3.

The type of material of which the device is made is preferably aluminum. It could be other types of metals or other materials sufficiently strong to support a person when the exercise device is in use.

The arm rest members **18** and **20** may take a variety of forms and includes cushions thereon if desired. The members may be made of square, tubular or any other suitable shape.

FIG. 4 illustrates how members **40** and **42** may be stacked one upon the other, followed by the member **44**, with members **46** and **48** being stacked on top. It is thus seen that the exercise device of the present invention offers the advantages of disassembly by a user and storage within a small area. The arrangement also makes it convenient for a manufacturer to package the device.

The heights of the different elements may be made adjustable to accommodate persons of different heights, if desired. However, it is contemplated that the height of the step members would be sufficiently high off the ground so that height adjustments would not be necessary even when the device is used by persons of widely varying heights.

The exercise device would be designed to accommodate persons of different heights and weights and therefore the dimensions of the various members are not considered critical. However, for purposes of illustration, one embodiment of the present invention would have the hand gripping members **28** and **30** approximately three and one half feet from the ground, more or less. The arm rest members **18** and **20** may be approximately four feet off the ground, more or less. The step members **32** and **34** may be ten inches off the ground, more or less. The space between the vertical members **12** and **14**, as well as the members **24** and **26**, may be approximately sixteen inches, more or less.

In some cases, it may be desirable to build a device incorporating the features relating to only one type of exercise, i.e. either the arm rest features alone or the features relating to the straight arms type of exercise. Other modifications might include features to help support a person once he gets into position, such as a crutch like element, for example.

It has thus been seen that an exercise device has been provided which enables a person to improve his spine condition without cumbersome inconvenient gymnasium devices. Because of this, he is able to perform these exercises in his own home or office at his own convenience. The exercise device is relatively inexpensive and occupies a minimum amount of space.

What is claimed is:

1. An exercise device comprising a main body, base means attached to said main body disposed to rest on the ground in a relatively fixed relationship therewith when said exercise device is in use, frame means supporting a pair of horizontal arm rests spaced above said base means, a horizontal hand gripping bar disposed on and above said arm rests and positioned to extend from the outer side of one arm rest to the outer side of the other arm rest to enable a person to grip said hand gripping bar and project his body off the ground while resting his arms on said arm rests whereby he is able to hold his

body off the ground in a vertical position by maintaining his arms in taut positions.

2. The invention as set forth in claim 1 wherein a step member is attached to said main body to enable a person to step thereon while manually gripping said hand gripping bar whereby when said person steps off said step member his body may be held free of the ground.

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ANTON O. OECHSLE, Primary Examiner

R. W. DIAZ, Assistant Examiner

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