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EXERCISER

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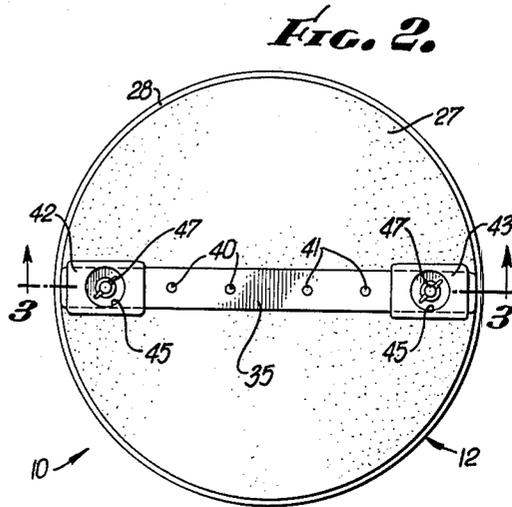
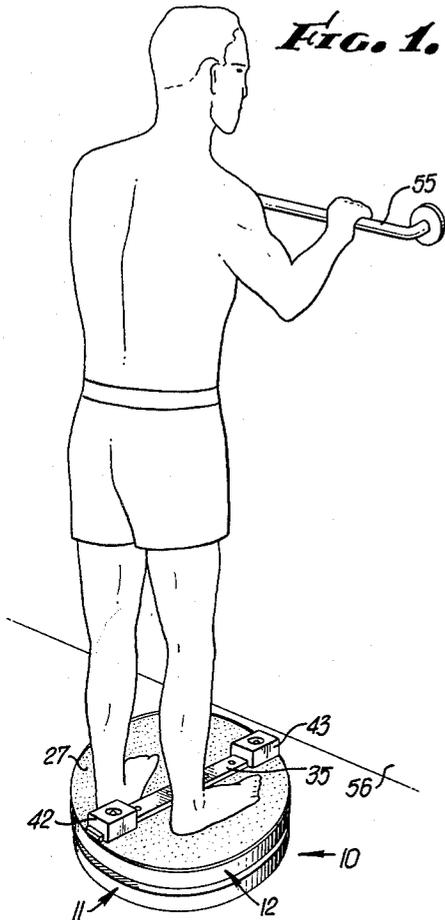


FIG. 4.

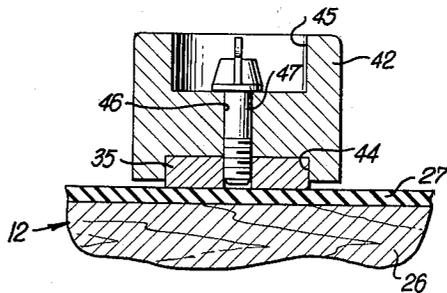
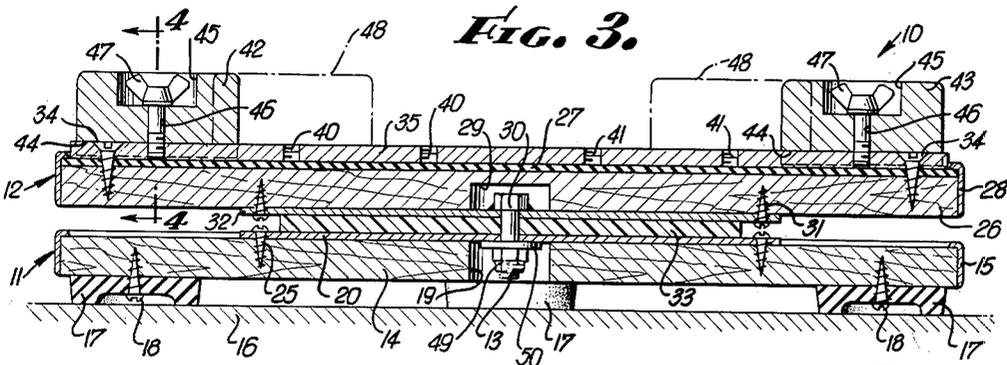


FIG. 3.



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EXERCISER

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This invention relates to exercisers and particularly to a type of exerciser including a pair of coaxially pivotally related disks equal in diameter, the lower disk resting on the floor and the upper disk comprising a rotary platform on which a person stands to exercise. This type of exerciser has the advantage of being small in size and thus readily stowable, and provides a means of performing a spinal exercise of great value to the health of children and adults.

Exercise is most commonly taken on this type of exerciser while standing upright on the exerciser platform and holding onto a heavy piece of furniture or a towel bar, or a special exercising bar provided for the purpose. With the body held erect, the platform is then rotated by twisting the body throughout its length to rotate the platform as far as possible in one direction, after which the body is quickly twisted as far as it will go in the opposite direction. The platform rotates with the feet in each of these body twisting movements which are repeated as often as desired and with more or less violence until the muscles used have been adequately exercised.

A number of exercisers of this general type have heretofore been developed which are distinguished from each other by their exhibiting different means for frictionally retarding the rotation of the platform of the exerciser whereby a greater effort must be expended by the person using the device in order to rotate the platform. This factor increases the rigor of the exercise and the development of the muscles used in it, and is a valuable addition to the simple device as originally made. However the retardation factor mentioned is constantly in opposition to the effort applied by the muscles of the body in rotating the platform and is as great toward the end of a body twisting movement as at the beginning of this. Thus the ratio of muscular capacity to the retarding force resisting this twisting effort, greatly diminishes in the final portion of each twisting movement. This had the tendency of tightening up the muscles at the point of maximum contraction.

I have discovered that these retarding devices stand in the way of realizing the greatest benefits capable of being derived from this general type of exerciser. This discovery has led me to a conception by which an entirely new and highly beneficial effect may be obtained by this mode of exercise.

It is an object of this invention to provide an exerciser of the type mentioned in which substantial forces are applied retarding the rotation of the platform at the initiation of each body twisting movement, and in which said forces are relaxed toward the end of each such movement.

Another object of the invention is to provide such an exerciser in which not only are said retarding forces withdrawn toward the end of each twisting movement, but substantial forces are applied to said platform at that time tending to cause continuation of the rotation of said platform and thus stretch the muscles in opposition to those causing this particular rotation of the body and apply an external twisting force to the spine at a time when the entire body is relaxed immediately following the exertion of rotating said platform, and thus loosen up the joints between the vertebrae and relieve pressure applied to nerves passing out through said joints.

A further object of the invention is to provide such an exerciser in which the platform is connected with an inertia

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means which applies a substantial negative torque moment to the platform tending to inhibit acceleration of the platform at the beginning of a twisting movement by the person standing thereon, said inertia means being thus invested with a substantial positive momentum tending to keep the platform rotating and thus giving an involuntary twist to the spine of the person using the exerciser at the conclusion of each voluntary twisting movement.

Yet another object of the invention is to provide such an exerciser in which the inertia means is adjustable to vary the moment applied by such means to the platform of the exerciser, thereby adapting the exerciser for use by individuals varying substantially in age and strength.

The manner of accomplishing the foregoing objects as well as further objects and advantages will be made manifest in the following description taken in connection with the accompanying drawings in which

FIG. 1 is a perspective view of a preferred embodiment of the invention being used by a person standing thereon.

FIG. 2 is an enlarged plan view of said exerciser.

FIG. 3 is an enlarged cross-sectional view taken on the line 3-3 of FIG. 2.

FIG. 4 is an enlarged detail sectional view taken on the line 4-4 of FIG. 3.

Referring specifically to the drawings, an exerciser 10 is shown therein which includes a base 11 and a platform 12 both of which are in the form of disks, these being coaxially pivotally connected by a bolt 13.

The base 11 includes a wooden disk 14 which is bound by a metal ferrule 15 and is supported on the floor 16 by four rubber feet 17 secured to the disk 14 by screws 18. The disk 14 has a central hole 19 and a metal plate 20 is secured by screws 25 to the upper face of said disk, this plate being centrally apertured to receive the bolt 13.

The platform 12 includes a wooden disk 26 covered with a sheet of ribbed rubber 27, both the disk 26 and the sheet of rubber 27 being bound by a metal ferrule 28. Formed centrally in the lower face of the disk 26 is a recess 29 for receiving the head 30 of a bolt 13. Secured to the bottom face of disk 26 by screws 31 is a plate 32 which is centrally apertured to receive the bolt 13, the head 30 of said bolt being welded to said plate. Also centrally apertured to receive the bolt 13 and occupying the space between plates 20 and 32 is a disk 33 of nylon or like plastic material which has relatively friction-free surfaces so as to provide a bearing between the platform 12 and the base 11 allowing free rotation of the platform on the base and not requiring lubrication.

Resting on the rubber mat 27 and extending diametrically across the platform 12 and secured to the disk 26 by screws 34 is an inertia weight mounting bar 35. This bar has two sets of three vertical threaded holes 40 and 21 which are spaced respectively equal distances from the axis of the platform 12 for the purpose of securing to said bar a pair of inertia weights 42 and 43. These weights are identical, each having a bottom channel 44 which fits the bar 35 and an upper recess 45 which comprises a counterbore of a vertical hole 46 provided in the weight for accommodating a wing-headed screw 47 which is inserted downwardly through the hole 46 and screwed into one of the tapped holes 40 or 41 to hold the weight in rigidly united relation with the platform 12.

The weights 42 and 43 are thus adapted to be united with the platform 12 with the centers of mass of these weights equally spaced from the axis of rotation of the platform. In FIGS. 1, 2 and 3, weights 42 and 43 are shown in their full line positions in their maximum spacing from said axis, and broken lines 48 in FIG. 3 show these weights fixed to the platform 12 in intermediate positions. This is to adjust the amount of inertia which is applied by the weights 42 and 43 to the platform 12 so that this will be suitable for the individual who at the mo-

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ment may be using the same. Thus, a man using the exerciser shown in FIG. 1 will usually prefer to have weights 42 and 43 in their outwardmost positions as shown in FIGS. 1, 2 and 3 in full lines. A woman using the exerciser will generally prefer to have weights 42 and 43 in their intermediate positions as shown in broken lines 48 in FIG. 3. When a child uses the exerciser 10, the weights 42 and 43 may be moved into their inwardmost positions or they may be removed entirely from the platform 12.

The bolt 13 has a castellated nut 49 which is cotted to the bolt and spaced from the plate 20 by a washer 50 which is preferably of nylon to reduce the friction between this and the plate 20 when the platform 12 is rotated.

Operation

The use of the platform 10 by a man is illustrated in FIG. 1. Here the exerciser is shown as associated with a towel bar 55 mounted on a wall 56 so that the bar 55 may be seized in the hands of the individual using the exerciser and still allow this individual to stand erect. When so standing on the platform 12, the spine of the individual is substantially in alignment with the vertical axis of the platform 12. Holding his shoulders against rotation by gripping the bar 55, the individual rapidly twists his body from his shoulders downwardly either to the left or to the right as far as he is able. The initial part of such a twisting movement is retarded by the inertia weights 42 and 43 so that as the rotation of the platform 12 reaches top speed a substantial amount of kinetic energy is stored up in the momentum thus imparted to these weights.

As the muscles employed in thus rotating the platform 12 reach the limit of their capacity to impart rotation to the platform because these muscles are shortened in such effort, the individual using the exerciser relaxes momentarily allowing the momentum of the weights 42 and 43 as well as that of the balance of the platform 12 to be applied in an involuntary twisting of the spinal column. In the illustrated embodiment the weights 42 and 43 are iron and weigh about 2½ pounds apiece so that these weights provide a torque moment of 5 pounds applied at the periphery of the platform 12. As the platform 12 is 16 inches in diameter in the preferred embodiment shown, rapid rotation of this in the body twisting exercise above described applies a very substantial snapping action to all the joints of the body between the shoulders and the feet when all these joints are relaxed at the conclusion of the twisting movement.

The relaxing effect produced by this exercise becomes readily apparent from just one trial of the exerciser. This apparently results from a loosening up of the joints between adjacent vertebrae so as to relax pressures applied in a condition of tenseness to nerves passing outwardly from the spinal column through said joints.

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Summing up the mode of operation of the exerciser 10 above described, it provides a means for storing substantial energy produced in the initial voluntary portion of a spinal twisting exercise which energy is applied to cause a continuation of this twisting movement while the body is relaxed which tends to loosen up all the joints in the body from the shoulders to the feet. Not only does the exerciser 10 provide this very beneficial form of exercise for full grown adults but it includes a means for modifying the momentum employed in this exercise so as to adapt the exerciser 10 for use also by children and women who do not desire to use the maximum amount of momentum available.

The claims are:

1. In an exerciser for twisting the spine and loosening the joints between adjacent vertebrae, the combination of: a horizontal platform of appropriate size to allow a person to stand uprightly thereon; base means for pivotally supporting said platform for free rotation of the latter about a centrally located vertical axis; a diametral bar secured to the upper face of said platform, said bar being provided with tapped holes at varying distances from said axis of rotation of said platform; a pair of weights; and screw means adapted to engage said tapped holes to secure said weights to said bar with the centers of mass of said weights located at varying radii from said axis of rotation.

2. In an exerciser, the combination of: a circular horizontal platform of appropriate size to accommodate a person standing uprightly thereon with his legs straddling a vertical plane containing a diameter of said platform; base means pivotally supporting said platform for free rotation of the latter about its center; a diametral bar lying flat against and secured to the upper face of said platform with the longitudinal center line of said bar in said plane; a pair of relatively heavy compact metal blocks; and means for adjustably securing said blocks to said bar so that the centers of gravity of said blocks lie in said plane and with said blocks located at different points along said bar but equally spaced substantial distances from the platform center, whereby said blocks do not interfere with a wide latitude of choice being allowed an individual in positioning his feet on said platform to support himself thereon with his center of gravity directly over the center of said platform in preparation for rotating said platform by twisting his body.

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