Nov. 4, 1941. W. H. MAXWELL 2,261,173

EXERCISING DEVICE

Filed Nov. 22, 1939 2 Sheets-Sheet 1

Fig. 1.

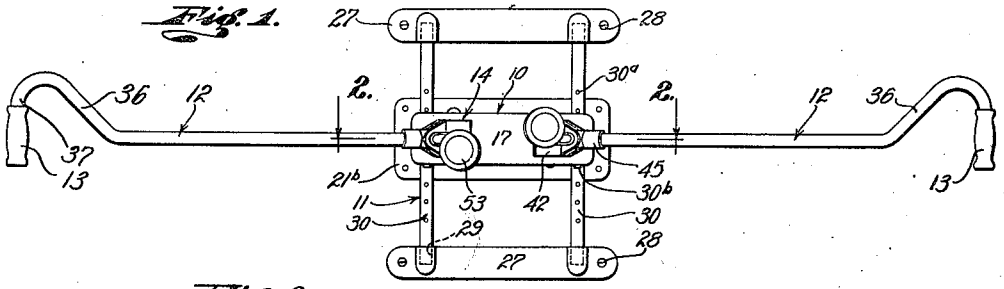


Fig. 2.

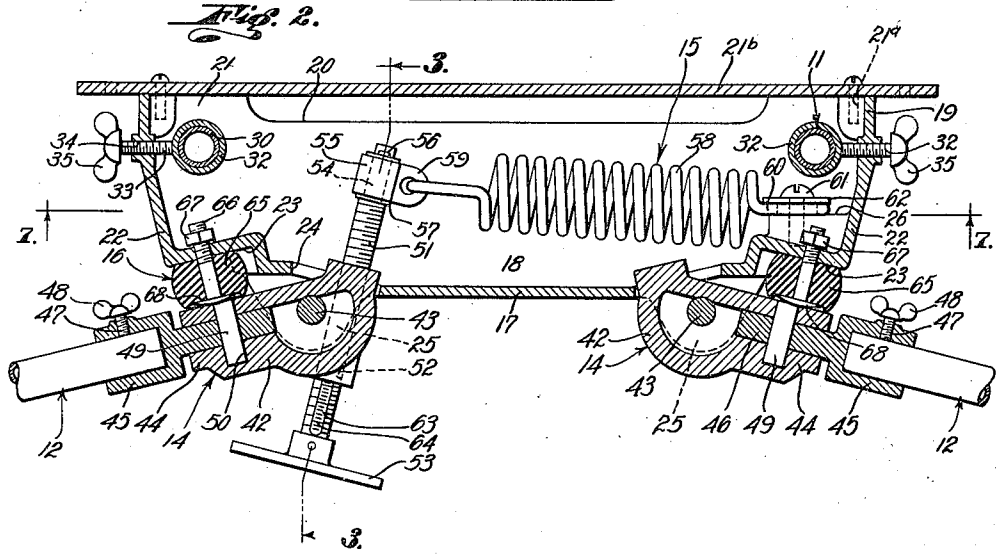


Fig. 3.

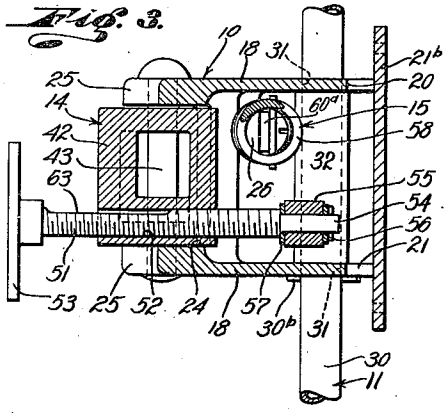


Fig. 6.

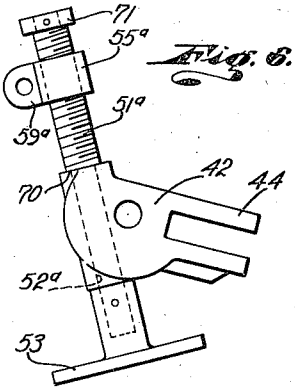


Fig. 4.

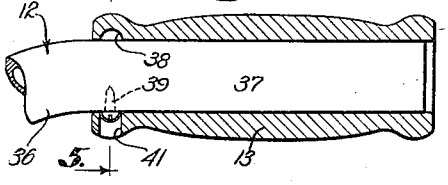
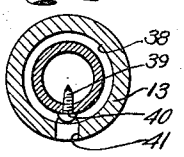


Fig. 5.



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EXERCISING DEVICE

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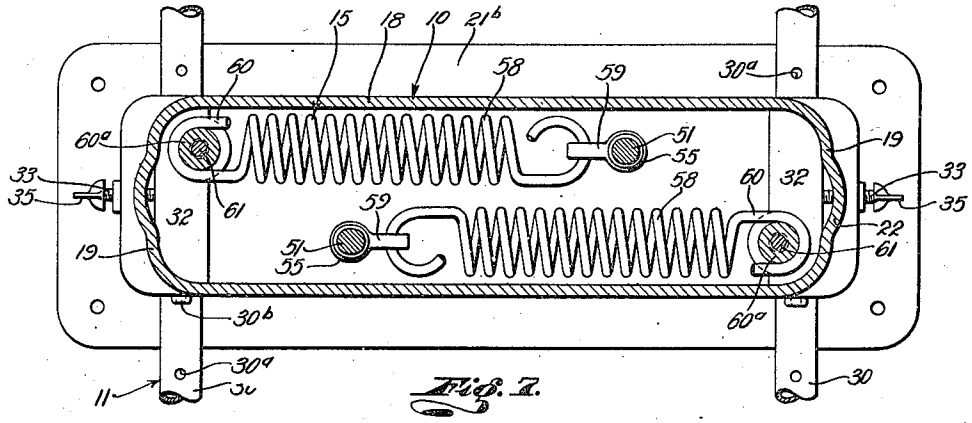


Fig. 7.

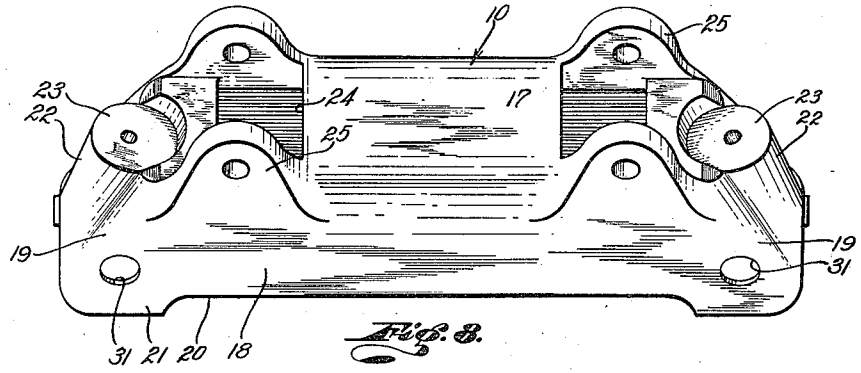


Fig. 8.

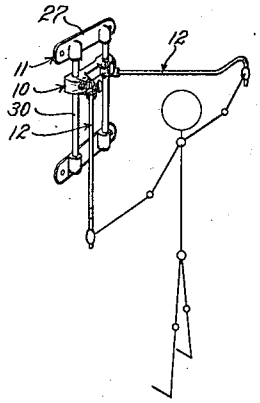


Fig. 9.

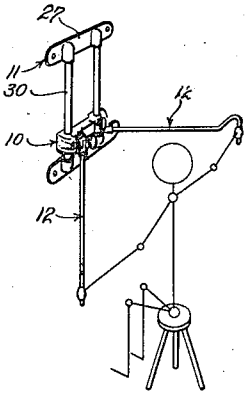


Fig. 10.

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UNITED STATES PATENT OFFICE

2,261,173

EXERCISING DEVICE

William H. Maxwell, Newport Beach, Calif.

Application November 22, 1939, Serial No. 305,689

36 Claims. (Cl. 272—83)

This invention relates to an exercising device and it is a general object of the invention to provide a practical and effective exercising device useful in exercising and training the muscles of the chest, back, shoulders and arms.

Another object of this invention is to provide an exercising device useful in correcting round shoulders and in working and developing the chest, back, shoulders and arm muscles, that may be safely employed by persons of various ages, heights, weights, states of physical development, etc. The apparatus can be successfully used without the exercise of skill or practice and without extensive supervision.

Another object of this invention is to provide a device of the character mentioned embodying a pair of swingable bars to be grasped when the arms of the user extend from his side, the bars being provided with novel means for yieldingly resisting inward swinging movement so that as the user draws the bars toward him he actively employs muscles of the shoulders, back and neck, particularly the rhomboideus and trapezius.

Another object of this invention is to provide a device of the character mentioned in which the means offering resistance to swinging of the bars may be individually regulated to provide the desired or required amount of resistance.

Another object of this invention is to provide a device of the character mentioned in which the bars are mounted to swing vertically as well as horizontally to give a wide range of movement to accommodate a wide variety of operating conditions and allowing the bars to hang close to the wall or other support when the device is idle.

Another object of this invention is to provide a device of the character mentioned embodying a single body forming a carrier for the various other parts and confining and housing the working parts of the spring means, etc. and constituting a compact, convenient mounting to facilitate ready attachment of the device to a wall, frame, or other support.

Another object of this invention is to provide a device of the character mentioned in which the bars are of simplified, improved construction and have dependable and effective mountings allowing for individual free movement horizontally and vertically, giving the device a very wide range of use without necessitating vertical adjustment of the body and adapting the device for the performance of various exercises.

Another object of this invention is to provide a device of the character mentioned embodying effective means for adjusting the resistance of the bars, which means gives visible indication of the resistance.

A further object of this invention is to provide a device of the character referred to embodying novel means for mounting the body of the device for vertical adjustment.

The various objects and features of my invention will be fully understood from the following detailed description of a typical preferred form and application of the invention, throughout which description reference is made to the accompanying drawings, in which:

Fig. 1 is a front view of one form of the invention illustrating the bars in extended positions. Fig. 2 is an enlarged fragmentary horizontal detailed sectional view taken as indicated by line 2—2 on Fig. 1. Fig. 3 is an enlarged vertical detailed sectional view taken as indicated by line 3—3 on Fig. 2. Fig. 4 is an enlarged fragmentary detailed sectional view illustrating one of the handles with the bar appearing in elevation. Fig. 5 is a transverse, detailed sectional view taken as indicated by line 5—5 on Fig. 4. Fig. 6 is an enlarged view of one of the bar carrying members and a spring adjusting screw illustrating a slightly modified form of spring adjusting means. Fig. 7 is a vertical detailed sectional view taken as indicated by line 7—7 on Fig. 2. Fig. 8 is a perspective view of the body with the working parts removed. Fig. 9 is a perspective diagrammatic view illustrating one manner of employing the device. Fig. 10 is a perspective diagrammatic view illustrating another manner of employing the device.

The device of the present invention comprises, generally, a body 10, means 11 for mounting or supporting the body 10 for vertical adjustment, a pair of arms or bars 12 having handles 13 to be grasped by the user, means 14 mounting the bars 12 on the body 10 for horizontal and vertical swinging movement, adjustable spring means 15 yieldingly resisting swinging of the bars 12, and means 16 limiting the outward movement of the bars 12 and absorbing shock that may accompany sudden movement of the bars by the spring means 15.

The body 10 constitutes a carrier for the bar mounting means 14 and a carrier and housing for the spring means 15. The body may be varied considerably in design and construction without departing from the spirit of the invention. Figs. 1 to 10, inclusive, illustrate one preferred form of body 10 adapted to be either fixed in a definite position to a suitable support, or to be adjustably carried by the means 11 or other ad-

justable support. The body 10 is in the nature of a shell, that is, it is hollow or relieved at its rear side and is preferably a one-piece or integral member. The body 10 includes a front wall 17, top and bottom walls 18, and end or side walls 19. In the preferred construction the body 10 is elongated horizontally and appears generally rectangular from the front. The front wall 17 is substantially vertical and the top and bottom walls 18 are substantially horizontal. The side walls 19 close the ends of the body 10, and, as illustrated, may be forwardly convergent. The body 10, when of the construction just described, may be a simple, one-piece casting.

In certain uses or applications of the invention the rear of the body 10 may directly bear against a wall, mounting plate, board, or other support. To facilitate such use the body is formed with threaded openings 21[a] opening at its rear side to accommodate mounting screws, or the like. A plate 21[b] is shown secured to the rear of the body by means of the screws in the threaded openings 21[a] to act as a closure for the body and to facilitate mounting of the body, if desired. In accordance with the invention the rear edges of the top and bottom walls 18 have their major portions stepped forwardly or relieved, as at 20, leaving legs or mountings 21 at the ends of the body presenting limited surfaces for bearing on a support or plate such as 21[b]. The limited bearing surfaces are readily finished by grinding. The side walls 19 are provided with bosses 22 presenting forwardly and inwardly facing surfaces 23. Openings 24 are provided in the front wall 17 near the ends of the body. The openings are substantially rectangular and are provided to receive elements of the arm mounting means 14. Forwardly projecting lugs or ears 25 are provided on the front wall 17 above and below the openings 24 to facilitate the attachment of the bar mounting means 14 to the body 10. Thickened parts are provided in the end portions of the body 10 adjacent the walls 19 and present flat rearwardly facing spring-carrying seats or shoulders 26. The shoulders 26 are equally spaced at opposite sides of the medial horizontal plane of the body.

The means 11 for mounting the body 10 is such that the device may be bodily adjusted vertically and set in different positions to adapt the device for use by persons of different heights and by persons in sitting or standing positions. The means 11 is not essential in every application of the invention as the body 10 may be rigidly secured to a support such as a wall, frame, or the like, in which case the mounting means 11 would not be required. Where adjustable mounting means 11 is employed it preferably comprises a pair of spaced brackets 27. The brackets 27 are preferably designed to extend horizontally and to be secured to a wall or other suitable support by screws 28 or other securing means passed through openings in their opposite ends. The brackets 27 have horizontally spaced sockets 29 related to receive and hold the ends of bars or rods 30 so the rods are vertically disposed.

Aligned vertical openings 31 are provided in the upper and lower walls 18 of the body 10 near the ends of the body to freely pass the rods 11. Sleeves 32 are arranged in the body 10 to slidably pass the rods 30. Clamp screws 33 are screwed through openings 34 in the side walls 19 so their inner ends engage the tubes 32. Wing heads 35, or other handle means, are provided on the outer ends of the screws 33 to facilitate the easy operation of the screws. When the screws 33 are tightened or threaded inwardly against the tubes 32 the tubes clamp against the rods 30 to set the body 10 against movement along the rods. When the screws 33 are loosened the tubes 32 are loose on the rods 30 and the body 10 is free to be vertically shifted along the rods. Another, or supplemental, adjusting means may be provided by forming the rods 30 with openings 30[a] to receive supporting pins 30[b] on which the body may rest.

The arms or bars 12 are the principal working parts of the device, being the elements that are engaged and manipulated by the user. There are two like bars 12 characterized by their simple, symmetrical design. The bars 12 are elongate elements, preferably formed of tubular stock to be light in weight. The bars 12 are supported in spaced relation on the body by the means 14 so they normally hang from the body 10 from which position they can be swung apart and out to their working positions, in which they can be swung in various directions to accomplish various exercises.

The outer ends of the bars 12 are formed to present convenient handle means or to carry handles 13. The outer portions of the bars 12 are bent to have laterally extending portions 36 which carry transverse portions 37 that are at substantially right angles to the longitudinal axes of their respective bars 12. The portions 37 are preferably formed to intersect the longitudinal axes of their respective bars 12 and, if desired, may constitute the handles to be grasped by the user.

The handles 13 while not essential are desirable in most cases, making manipulation of the apparatus somewhat easier. The handles 13 are tubular elements rotatable on the transverse outer portions 37 of the bars 12. The exteriors of the handles 13 are shaped for convenient engagement or grasping. Means are provided to hold the handles 13 against displacement. A circumferential groove 38 is provided in the interior of each handle 13 and screws 39 are engaged in openings 40 in the bar portions 37 so their heads are received in the grooves 38. Openings 41 are provided in the side walls of the handles 13 and communicate with the grooves 38 to facilitate the insertion of the screws 39. The screw heads cooperating with the grooves 38 dependably hold the handles 13 against longitudinal movement but do not interfere with free turning of the handles. The handles 13 preferably cover or conceal the extremities of the bar portions 37.

The bar mounting means 14 are such that the bars 12 may be individually swung about both horizontal and vertical axes, the mounting being in the nature of universal joint means that allow swinging of the bars in various directions and to various positions. The universal bar mounting means 14 are such that the bars 12 normally depend from the body 10 so the device occupies a minimum of space horizontally of the wall or other support and allow the bars to slope either upwardly or downwardly when operated by persons of different heights and by persons in different positions, and when employed in the performance of exercises of various natures. In the particular form of mounting illustrated as an example of one possible construction, each mounting means 14 includes what may be termed a pivot block 42. The blocks 42 are supported in the openings 24 between the ears 25 to operate in and to close the openings 24. The blocks 42

have flat, generally horizontal upper and lower sides received with suitable clearance between the opposing surfaces of the ears 25. The blocks 42 and the ears 25 have aligned or registering vertical openings which receive pivot pins 43. The pins 43 may be in the form of heavy rivets provided at their upper ends with heads, and having their lower ends distorted or peened over. The forward surfaces of the blocks 42 may be substantially cylindrically curved about the vertical pivotal axes of the blocks. A vertically disposed fork or yoke 44 is provided on the front or outer side of each block 42. With the parts in the normal or idle positions the yokes 44 are faced from the ends of the body and forward at a slight angle.

The means 14 further include fittings on the inner ends of the bars 12. These fittings include sockets 45 receiving the inner end portions of the bars 12 and tongues 46 received in the yokes 44. Retaining means such as set screws 47 are screwed through lateral openings in the sockets 45 to secure the bars 12 in the sockets. It may be preferred to removably secure the bars 12 to the means 14 so that the bars may be detached to facilitate shipping and transporting of the device. The bar attaching screws 47 may have wing heads 48 or other handle means to facilitate convenient operation. The tongues 46 are adapted to work or pivot in the yokes 44. Registering horizontal openings in the yokes 44 and the tongues 46 receive pivot pins 49. The pins 49 secure the bars 12 to the blocks 42 for free pivoting about substantially horizontal axes. The openings 50 in the yokes 44 for receiving the pins 49 do not pass completely through the yokes but terminate before reaching the fronts of the yokes. Accordingly, the pins 49 cannot move forwardly from their openings. The pins 49 are prevented from moving rearwardly from their openings by the means 16, as will be later described, when the parts are in the idle positions. When the bars 12 are being operated the forces transmitted by the tongues 46 and the pins 49 hold the pins against displacement. It will be observed that the means 14 for mounting the bars 12 are simple, sturdy and dependable. The blocks 42 may be identical and are arranged to swing in the openings 24 so that the interior of the body 10 is never accessible through the openings and so that objects cannot become caught in the openings.

The spring means 15 are provided to offer desirable resistance to swinging of the bars 12 toward one another about their vertical axes when they are extended as illustrated in Figs. 1, 2, 9 and 10, and serve to urge the bars outwardly or away from one another when in the extended positions. It is a feature of the invention that the means 14 are separately or individually regulable to offer selected resistances to swinging of the individual bars 12.

Each spring means 15 includes a lever element carried by a pivoted block 42. The lever elements are adjustable longitudinally and in the preferred construction are in the nature of threaded stems or screws 51. The screws 51 are threaded through substantially horizontal openings 52 in the blocks 42 to extend rearwardly into the hollow body 10 and to project forwardly from the blocks so that they are accessible for manipulation at the front of the device. The blocks 42 may be thickened or provided with bosses at the opposite ends of the screw receiving openings 52. In accordance with the invention the openings 52 are offset vertically from the medial horizontal plane of the body 10, and the opening 52 in one block 42 is above said plane while the opening 52 in the other block is below it. The blocks 42 may be identical, as above described, and the relationship of openings 52 just described occurs by reason of the opposed disposition of the blocks. The forward ends of the screws 52 carry suitable operating wheels or knobs 53. The inner portions 54 of the screws 51 are without threads and are preferably reduced in diameter. Sleeves 55 are turnably supported on the reduced screw portions 54. Keys 56 on the screws 51 hold the sleeves 55 against displacement from the screws. Washers 57 of leather or similar material are arranged on the reduced screw portions 54 at the opposite ends of the sleeves 55. The washers 57 may be saturated with or carry a suitable lubricant for lubricating the bearing between the parts 55 and 54. The washers 57 serve to dampen or absorb end play or end slap of the sleeves 55 that may occur during operation of the device.

The means 15 further include springs 58 operatively connected with the lever-like screws 51 through the medium of the sleeves 55. The springs 58 are rather strong, extensible coiled springs arranged substantially horizontally in the body 10. Because of the vertical offsetting of the screw-passing openings 52 described above, the springs are located one above the other and are suitably spaced apart. Each spring 58 has an eye or hook-like end received in an eye 59 on a sleeve 55. The springs 58 extend from their respective sleeves 55 toward the remote ends of the body 10. Loops or eyes 60 may be formed on the outer ends of the springs 58 to receive bosses 60^a on the shoulders 26 and to lie against the shoulders. Anchoring screws 61 are screwed into openings in the shoulders 26 to pass through the bosses 60^a and washers 62 are arranged under the screw heads to clamp the spring eyes 60 against the shoulders 26. It is preferred to rigidly clamp the spring eyes 60 against the shoulders 26 so that the springs do not have noise-producing play or movement on the shoulders 26. With the spring eyes 60 firmly clamped against the shoulders 26 angular changes in the springs 58, due to swinging of the screws 51, merely produce flexure through the lengths of the springs. The sleeves 55 turnably supported on the screw portions 54 allow the screws to be rotated to adjust the means 15.

The springs 58 mounted as described are practically silent when the device is in operation and do not sing, vibrate, or chatter. The springs 58 are preferably under a uormal or initial tension to urge the lever-like screws 51 inwardly or toward the central vertical axis of the device and thus urge the blocks 42 and bars 12 outwardly, or apart. When the bars 12 are swung inwardly or toward one another from the extended position shown in Figs. 1 and 2 the springs 58 are elongated and, of course, offer resistance to the movement. By adjusting or threading the screws 51 the ratio between the active lengths of the screws 51 and the bars 12 may be varied to change the mechanical advantage of the springs 58 over the bars 12. Thus, simple turning of the screws 51 serves to regulate the spring means 15. The pull of the springs 58 on the screws 51 serves to hold the screws 51 firmly in their openings 52 so they must be positively or intentionally adjusted and cannot turn through vibration of the parts or by unintentional en-

gagement with the screws or their operating knobs 53.

Although the approximate condition of adjustment of the screws may be observed from the general position of the screws, it is preferred to provide means to visibly indicate, with accuracy, the condition or adjustment of the spring means 15. Each screw 51 is provided with a longitudinally extending flat face 63. The faces 63 are on the exposed visible outer portions of the screws 51 and have longitudinally spaced calibrations 64. The calibrations 64 may be read at the forward faces of the blocks 42 to determine the settings or adjustments of the means 15.

The means 16 serve to limit the outward or lateral swing of the bars 12 and operate to dampen or absorb shock that may result from the forcible outward movement of the bars under the action of the springs 58. The means 16 include stops 65 of yielding resilient material such as rubber, arranged against the shoulders 23 of the bosses 22. The stops 65 may be tubular or provided with central longitudinal openings which receive screws or bolts 66. The bolts 66 pass rearwardly through openings in the shoulders 23 and nuts 67 are adjustably threaded on their projecting rear portions. The heads 68 of the screws 67 bear against the forward ends of the stops 65 and the nuts 67 may be adjusted to put the stops 65 under varying degrees of compression and thus change the positions of the heads 68. The heads 68 are engageable by the blocks 42 and may be engaged by the ends of the pivot pins 49. The screw heads 68 are backed up by the yielding stops 65 so that engagement of the blocks 42 and the pins 49 with the screw heads is practically noiseless. The engagement of the blocks 42 and the pins 49 with the screw heads 68 positions or locates the blocks 42 so that the handles 13 of the extended bars 12 are readily engageable by the user, and the above described adjustment of the nuts 67 may regulate or vary this position of the handles 13.

To quickly and easily assemble the mechanism so that the springs are under an initial tension, the blocks 42 with the bars attached are applied to the body and swung to positions allowing the springs to be freely assembled. The bars are then swung out allowing the bumper means to be arranged in place, after which the blocks cannot return for enough to fully release the tension on the springs.

In the operation of the device it will be assumed that the body 10 is supported by the means 11 and is adjusted to the selected height. In this connection it is to be understood that the device may be adjusted on the means 11 to adapt it for use by persons of different heights and by persons either standing or sitting. The screws 51 may be adjusted by turning the knobs 53 to give the desired or required resistance to inward swinging of the bars 12. In most instances it is preferred to adjust the means 15 so that the spring resistances on the two bars 12 are substantially alike. However, the resistances on the bars may be made unequal, if desired.

In exercising with the device the user faces the apparatus and grips the handles 13 with the palms up. The bars 12 are then swung out or apart until the arms are extended substantially straight out or horizontally from the sides of the body. The user assumes a vertical or good postural position with the body rigid and the arms extended, and leans forward to shift a portion of his weight to the balls of the feet. This thrusts the body forward and applies a tension or stretching to the muscles of the chest and shoulders. While leaning forward the user may rock back and forth slightly to work the chest muscles and vary the tension on the same. This exercise is completed by returning the body to the original vertical position.

The device may be employed to actively work and shorten the muscles of the back in the region of the shoulders. The user assumes a position between the bars 12 with the arms extending horizontally, gripping the handles 13. The user's body is moved forward to bring the shoulders slightly ahead of the line extending between the handles 13 of the bars 12. The handles 13 are then pulled or drawn toward the body, bending the elbows down. In performing this operation the resistance to movement of the bars 12 offered by the springs 58 should be overcome, as far as possible, by the muscles of the back instead of those of the arms. The arms are returned to the extended positions and the exercise may be repeated. The above exercises and the various other exercises that may be performed with the apparatus may be performed with the user either standing or sitting, as conditions may require. It will be apparent that a wide variety of exercises may be carried out by arranging the bars at different angles, for instance, both above or below a horizontal position, or one above and one below a horizontal position, and by varying the adjustment of the spring means.

Fig. 6 of the drawings illustrates a slightly modified form of structure for embodiment in the spring means 15. In this construction the block 42 has a plain or unthreaded opening 52a passing an unthreaded portion of the screw 51a. The unthreaded portion of the screw 51a is reduced in diameter providing a forwardly facing shoulder 70 engageable with the rear side of the block 42 to prevent forward movement of the screw. The operating knob 53 on the forward end of the screw 51a may engage against the front of the block 42 to prevent rearward movement of the screw 51a. In this construction the spring receiving or spring anchoring sleeve 55a is threaded to and travels along the screw 51a when the same is turned or adjusted. The traveling nut or sleeve 55a is threaded on the screw 51a and the engagement of the spring in its eye 59a holds it against turning. Accordingly, rotation of the screw 51a results in movement of the sleeve along the screw. A stop collar 71 may be fixed on the rear end of the screw 51a to limit the rearward travel of the sleeve 55a.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art or fall within the scope of the following claims.

Having described my invention, I claim:

1. An exercising device to be mounted on a vertical support comprising a pair of spaced bars, parts at the outer ends of the bars to be grasped by the user, means supporting the bars from their inner ends at a single location on the support for movement about substantially horizontal axes so the bars may be freely swung from inactive positions where they depend from the support and are in substantially vertical positions to generally horizontal operating positions and for swinging movement about substantially vertical axes so the bars may be swung toward and away from one

another in said horizontal positions, and means yieldingly resisting swinging of the bars horizontally toward one other about the vertical axes.

2. An exercising device to be mounted on a vertical support comprising a pair of bars, means supporting the bars from their inner ends to project divergently forward from the support and for swinging movement about substantially vertical axes, and means for yieldingly resisting movement of the bars comprising lever elements connected with the bars, resilient means associated with the lever elements, and means for adjusting the lever elements to vary the resistance to swinging of the bars.

3. An exercising device to be mounted on a vertical support comprising a body, means for mounting the body for vertical adjustment on the support, a pair of bars, horizontally spaced means supporting the bars on the body from their ends for free swinging movement about substantially horizontal axes and for swinging movement about substantially vertical axes, handles on the outer ends of the bars to be grasped by the operator when his arms are extended horizontally, each means comprising a member supported on the body for movement about a substantially vertical axis and carrying the bar for movement about a substantially horizontal axis and a spring in connection with each member for resisting movement of the bars toward the operator in a horizontal plane.

4. An exercising device comprising a body having a pair of spaced openings, pivotally mounted members received in said openings, bars carried by said members to be swingable toward and away from one another, and means in the body associated with said members for yieldingly resisting swinging of the bars.

5. An exercising device comprising a body having a pair of spaced openings, members pivoted to the body, bars carried by said members to be swingable toward and away from one another, adjusting screws carried by said members to extend into the body through the openings, spring elements in the body, and means associating the spring elements with the screws to yieldingly resist swinging of the bars in one direction and to have their movement resisting action varied by rotation of the screws.

6. An exercising device comprising a body forming a housing having a pair of spaced openings, members pivotally carried in the body, bars carried by said members at the exterior of the body to be swingable toward and away from one another, screws adjustably threaded through the members to extend into the body through the openings, springs in the body, and means connecting the springs with the screws to yieldingly resist swinging of the bars in one direction and to be adjusted by the screws to offer varying degrees of resistance to swinging of the bars.

7. An exercising device comprising a body, a pair of bars, members pivoted to the body to turn about substantially vertical axes, fittings on the inner ends of the bars, the members and fittings having registering openings, pins in said openings holding the bars for swinging about substantially horizontal axes, means yieldingly resisting swinging of the bars toward one another about said vertical axes and urging the bars and members outwardly away from one another, and means limiting said outward swinging of the bars and members.

8. An exercising device comprising a body, a pair of bars, members pivoted to the body to turn about substantially vertical axes, fittings on the inner ends of the bars, the members and fittings having registering openings, pins in said openings mounting the bars to swing about substantially horizontal axes, means yieldingly resisting swinging of the bars toward one another about said vertical axes and urging the bars and members outwardly away from one another, and shock-absorbing means on the body limiting outward swinging of the bars.

9. An exercising device for mounting on a vertical support comprising a body to be mounted on the support and forming a housing the interior of which is accessible only from the support side of the body when the body is removed from the support, a pair of bars, members mounting the bars on the body to normally depend therefrom and operate to project therefrom and swing horizontally toward and away from one another, and means housed in the body connected with the members to yieldingly resist swinging of the bars in one direction.

10. An exercising device for mounting on a vertical support comprising a body to be mounted on the support and forming a housing the interior of which is accessible only from the support side of the body when the body is removed from the support, the body having openings in its front, exercising bars, members obstructing the openings supporting the bars at the exterior of the body to normally depend therefrom and for swinging movement horizontally toward and away from one another, and means in the body operatively connected with the members to yieldingly resist swinging of the bars toward one another.

11. An exercising device for mounting on a vertical support comprising a body to be mounted on the support and forming a housing the interior of which is accessible only from the support side of the body when the body is removed from the support, the body having a pair of openings in its front, exercising bars, members mounted in the openings supporting the bars at the exterior of the body to normally depend therefrom and for horizontal swinging movement toward and away from one another, spring means housed in the body, parts on the members at the interior of the body, and connections in the body between the spring means and said parts whereby the spring means resist swinging of the bars toward one another.

12. In an exercising device, a single elongate bar having a portion extending laterally and forwardly and a portion joining the outer end of the first named portion and extending transversely of the longitudinal axis of the bar, said portions being integral with the bar, means supporting the bar at its inner end for swinging movement and against rotation on its own axis, and handle means on the second named portion.

13. An exercising device comprising a body, a pair of bars, means for connecting the inner ends of the bars with the body to be swingable inwardly and outwardly toward and away from one another, means on the body for limiting swinging of the bars in the outward direction, and means for adjusting the last named means to vary the extreme outward positions of the bars.

14. An exercising device comprising a body, a pair of bars, means for connecting the inner ends of the bars with the body to be swingable about substantially vertical axes, means for yieldingly resisting swinging of the bars toward one an-

other and urging the bars to swing outwardly away from one another, and shock absorbing means for limiting the outward swinging of the bars.

15. An exercising device comprising a body, a pair of bars, means for connecting the inner ends of the bars with the body to be swingable horizontally, means for yieldingly resisting swinging of the bars toward one another and urging the bars to swing outwardly away from one another, and shock absorbing means for limiting the outward swinging of the bars, the last named means including yielding cushion elements on the body, and shiftable members connected with the body and bearing against the outer sides of the cushion elements and engageable by the bars.

16. An exercising device comprising a body, a pair of bars, means for connecting the inner ends of the bars with the body to swing horizontally, means for yieldingly resisting swinging of the bars toward one another and urging the bars to swing outwardly away from one another, and shock absorbing means for limiting the outward swinging of the bars, the last named means including yielding cushions on the body, shiftable securing members for the cushions bearing against the outer sides of the cushions to secure the same to the body and to be engaged by the bars to limit said outward movement, and means for adjusting the securing members to vary the limits of the outward swinging of the bars.

17. An exercising device comprising a body, members pivotally carried by the body, bars carried by said members at the exterior of the body to swing toward and away from one another, adjusting screws extending through the members into the body, spring elements in the body, and means associating the spring elements with the screws to yieldingly resist swinging of the bars in one direction and to have their movement resisting action varied by adjustment of the screws, the last named means including nuts threaded on the screws and connected with the spring elements to be held against turning thereby.

18. An exercising device to be mounted on a vertical support comprising a pair of bars, means for connecting the bars to the support to project them forwardly therefrom and laterally in opposite directions to be grasped by the operator when his arms are extended horizontally, said means including pivotal connections allowing the bars to swing horizontally and to swing vertically, and means offering resistance to swinging of the bars in substantially horizontal planes.

19. An exercising device to be mounted on a vertical support comprising a pair of bars, means for connecting the bars to the support to project them forwardly therefrom and laterally in opposite directions to be grasped by the operator when his arms are extended horizontally, said means including a substantially horizontal pivot for each bar to allow it to freely swing vertically and a substantially vertical pivot to allow it to swing horizontally and means offering resistance to swinging of the bars about the vertical pivots.

20. An exercising device to be mounted on a vertical support comprising a pair of bars, parts at the outer ends of the bars to be grasped by the user, means supporting the bars at a single location on the support to forwardly diverge them therefrom, said means including pivotal axes for both vertical and horizontal movement of each bar, and means yieldingly resisting swinging of the bars in substantially horizontal planes including a spring connected with each bar.

21. An exercising device to be mounted on a vertical support comprising a pair of bars, means for connecting the bars to the support to project them forwardly therefrom and laterally in opposite directions to be grasped by the operator when his arms are extended horizontally, said means including pivotal connections allowing the bars to swing horizontally and to swing vertically, and yielding resistance for the bars including yielding means and variable leverage connections between the yielding means and the bars.

22. An exercising device including, a body, a member pivotally carried by the body, a bar connected to the member for pivotal movement, a tension spring having one end anchored and a screw connected with the bar to adjustably connect the other end of the spring and the bar so the spring resists movement of the bar in one direction.

23. An exercising device including, a body, a bar, resilient means, and means connecting the bar with the body and the resilient means including a rotatable screw, and a nut on the screw connected with the resilient means.

24. An exercising device including, a body, a bar, resilient means, and means connecting the bar with the body and the resilient means including a member connected with the bar, a screw threaded with said member, and a part connecting the resilient means and the screw.

25. An exercising device to be mounted on a vertical support comprising a pair of bars having handles at their outer ends, means supporting the bars from their inner ends to be freely swung to positions to project divergently forward in a horizontal direction from the support and for swinging movement about substantially vertical axes and to be held through the handles by the operator when his arms are extended horizontally, and individual means for each bar yieldingly resisting swinging of the bars toward one another and including a tension spring having one end anchored and an adjusting screw shiftable bodily with the bar and operatively connected with the other end of the spring.

26. An exercising device comprising a body, members pivotally carried by the body, bars carried by said members at the exterior of the body to swing toward and away from one another, adjusting screws extending through the members into the body, spring elements in the body, and means associating the spring elements with the screws to yieldingly resist swinging of the bars in one direction and to have their movement resisting action varied by adjustment of the screws.

27. An exercising device comprising a body, members pivotally carried by the body, bars carried by said members at the exterior of the body to swing toward and away from one another, adjusting screws extending through the members into the body, spring elements in the body, and means associating the spring elements with the screws to yieldingly resist swinging of the bars in one direction and to have their movement resisting action varied by adjustment of the screws, the last named means including connections between the spring elements and the end portions of the screws within the body, the screws having threaded connection with said members.

28. An exercising device to be mounted on a vertical support comprising a pair of bars, means for connecting the bars to the support to project them forwardly therefrom and laterally in oppo-

site directions to be grasped by the operator when his arms are extended horizontally, said means including pivotal connections allowing the bars to swing horizontally and to swing vertically, and yielding resistance for the bars including yielding means and variable leverage connections between the yielding means and the bars, each leverage connection including a screw operable to vary the leverage.

29. An exercising device to be mounted on a vertical support comprising a pair of bars, means for connecting the bars to the support to project them forwardly therefrom and laterally in opposite directions to be grasped by the operator when his arms are extended horizontally, said means including pivotal connections allowing the bars to swing horizontally and to swing vertically, and yielding resistance for the bars including yielding means and variable leverage connections between the yielding means and the bars, each leverage connection including a screw and a nut on the screw and connected with the yielding means.

30. An evercising device to be mounted on a vertical support comprising a pair of bars, means for connecting the bars to the support to project them forwardly therefrom and laterally in opposite directions to be grasped by the operator when his arms are extended horizontally, said means including pivotal connections allowing the bars to swing horizontally and to swing vertically, and yielding resistance for the bars including yielding means and variable leverage connections between the yielding means and the bars, each leverage connection including a screw connected with the yielding means and mounted to move bodily and vary the leverage upon being rotated.

31. An exercising device including, a body, a bar, resilient means, and means connecting the bar with the body and the resilient means including a screw mounted through its threads to shift longitudinally upon being rotated, the resilient means being connected to the screw.

32. An exercising device including a body, a bar, resilient means for acting on the bar, a screw operatively connected with the resilient means, and a common connection between the body, the bar and the screw, whereby the screw moves with the bar, the screw being operable to vary the action of the resilient means on the bar.

33. An exercising device comprising a horizontally disposed body, two members pivotally carried at opposite ends of the body, bars carried by said members to be swingable horizontally toward and away from one another and provided at their outer ends with handles to be grasped by the user when his arms are extended horizontally, and a pair of springs extending horizontally in the body, one spring having one end operatively connected with one of said members and the other end fixed in the body and the other spring having one end operatively connected with the other of said members and the other end fixed in the body.

34. An exercising device including, a body, a bar pivotally carried by the body, resilient means and a variable leverage connection between the bar and resilient means whereby the resilient means resists pivotal movement of the bar in one direction, said means including a screw operable to vary the leverage.

35. An exercising device including a body, a bar pivotally carried by the body, resilient means and a variable leverage connection between the bar and resilient means whereby the resilient means resists pivotal movement of the bar in one direction, said means including a screw operable to vary the leverage, the screw pivotally moving with the bar and being operatively connected with the resilient means.

36. An exercising device including, a body, a bar pivotally carried by the body, resilient means, and a variable leverage connection between the bar and resilient means whereby the resilient means resists pivotal movement of the bar in one direction, said means including a screw acting as a lever and operable to vary the leverage.

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