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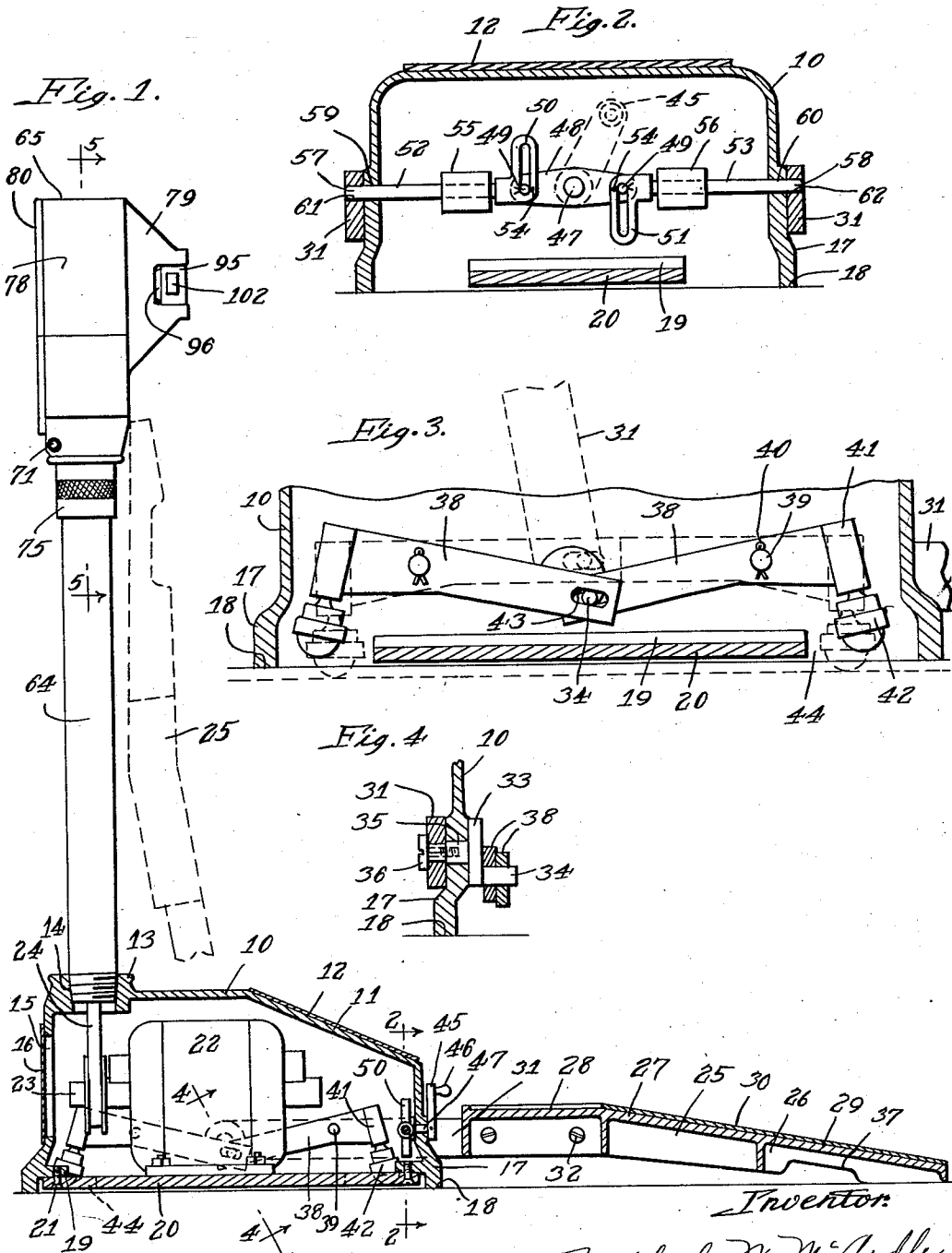
M. W. McARDLE

1,859,976

HEALTH EXERCISER

Filed Dec. 12, 1929

2 Sheets-Sheet 1



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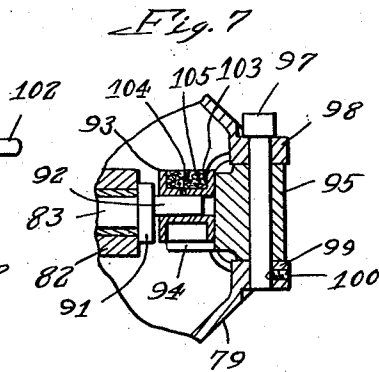
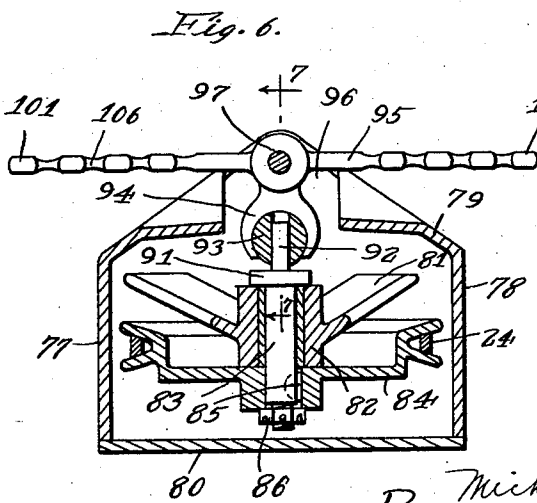
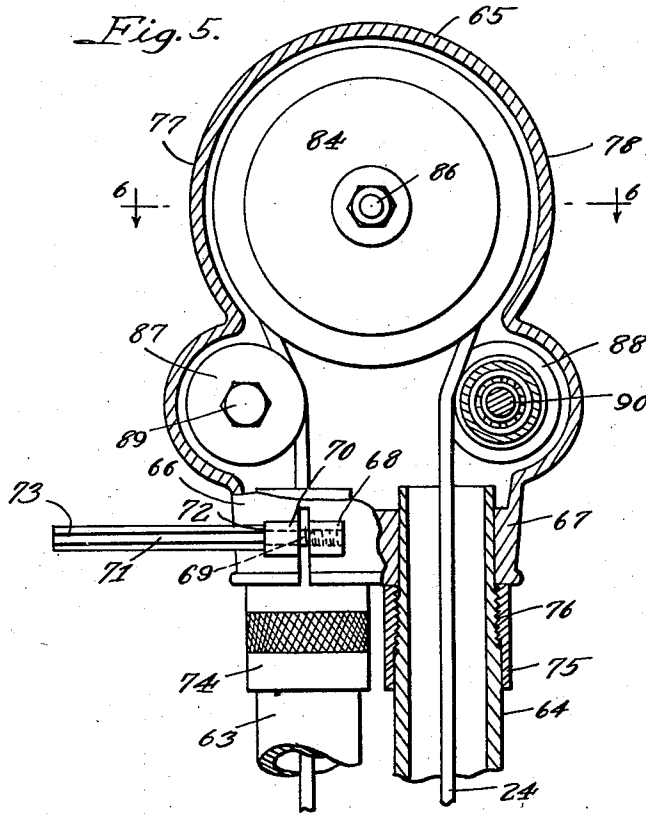
M. W. McARDLE

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HEALTH EXERCISER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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HEALTH EXERCISER

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My invention relates to health exercisers and has special reference to the type adapted for household use arranged to provide stimulation to various portions of the human body through oscillating movement thereof.

The general object of the invention is to provide a generally improved health exerciser of greater convenience and utility than has heretofore been known, wherein the driving motor is placed in the base of the machine which rests upon the floor and wherein a platform is provided, movable between an inoperative position above the base and an operative position into which it is fastened to permit the user to stand thereon, eliminating the necessity of fastening the machine to a suitable support during operation. In the inoperative position of the platform, the floor space occupied by the machine is substantially smaller than for other machines having platforms.

Another object is the provision of a machine which may be easily moved about within the house and placed in inconspicuous or concealed places when not in use.

I have also aimed to provide a machine which may be economically manufactured.

I have further aimed to provide an exerciser having improved means of operating an oscillating member characterized by the location of the motor in the base and the provision of enclosed intermediate mechanism for transmitting motion from the base to the oscillating member.

Another object is the provision of improved means for producing oscillating motion of the rocker arm.

Other objects and attendant advantages will become apparent to those skilled in the art from the following description and the accompanying drawings in which—

Figure 1 is a side elevation of the machine showing the base and platform in section, the inoperative position of the platform being shown in dotted lines;

Fig. 2 is a section on the line 2—2 of Fig. 1 showing the means for locking the platform in its operative position;

Fig. 3 is a section similar to that shown

in Fig. 1 but on a somewhat larger scale showing the caster arrangement;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is a section on the line 5—5 of Fig. 1 showing the head in section;

Fig. 6 is a section on the line 6—6 of Fig. 5 showing the rocker arm and actuating mechanism, and

Fig. 7 is a section on the line 7—7 of Fig. 6 showing a vertical section through the rocker arm and rocker arm crank.

The machine consists generally of a base arranged to rest upon the floor and house the driving motor, an operating head supported from the base by suitable uprights, and a platform arranged to move between an operative position resting upon the floor and an inoperative position above the base. The operating head is driven from the motor in the base by means of a belt passing through the supporting upright. Movement of the platform from the operative to the inoperative position causes a plurality of casters to be forced out of the base, lifting the machine and supporting it upon the casters. Movement of the platform from the inoperative to the operative position causes the retraction of the casters letting the machine down solidly onto the base. Means are provided for locking the platform in its operative position.

Referring now to the drawings, Figs. 1 to 4, the numeral 10 indicates generally the base of the machine arranged to support the remainder of the operating mechanism. While this base may be of any desired shape I have found it convenient to give it a box-like shape, in order to completely cover the motor, and provide its front top portion with a downwardly inclined face, as indicated at 11. If desired, this face 11 may be provided with a pad 12 of corrugated material such as rubber or the like upon which the foot of the user may be placed, when using the machine as will presently appear. The base is provided, at the back of the top portion, with two bosses 13 having threaded openings 14 to receive the uprights presently to be described. An opening 15 may be provided in the back wall of the base through

which access may be had to the motor or to the belt. This opening may be covered by a plate 16 secured by suitable bolts, screws or the like. The sides of the base are flared somewhat near their lower edges, as indicated at 17, the lower edges 18 thereof being coplanar to provide a smooth contact with the floor. Ledges 19 project inward from the inner face of the base and serve to support the motor board 20 through screws 21. A driving motor 22 having a pulley 23 arranged to drive the belt 24 is supported on the motor board 20. It will be seen that the ledges 19 are so positioned as to support the motor board 20 a very small distance from the floor when the base rests upon its lower edge 18, whereby the assembled base possesses a very low center of gravity.

In order to provide a place for the user of the machine to stand and to stabilize the machine against forces which will presently become apparent, the platform indicated generally by 25 is provided. The platform consists of two parallelly disposed side portions 26 and a top portion 27 having a horizontally disposed part 28 and an inclined part 29. The platform may be covered on its top with a corrugated soft material such as rubber 30, if desired. Side arms 31 attached to the platform on either side by means of screws 32, lie along the sides of the base 10 and serve to support the platform 25 thereon. A crank 33 having an eccentric pin 34 is rotatably positioned in each side of the base 10 through a center pin 35 having a bearing in the side walls of the base. The arms 31 are positioned upon the center pins 35 at each side of the base 10 through screws 36, the crank 33 and center pin 35 being arranged to rotate with rotation of the arms 31. It will be seen that by this arrangement the operator may grasp the platform at the hand holes 37 and raise it from the operative position shown in full lines in Fig. 1 to the inoperative position shown in dotted lines in the same figure.

In order to provide a simple and easy way of moving the machine from place to place in the house and permit it to be moved to an inconspicuous place, I have arranged to have casters projected downward from the base of the machine when the platform is moved from its operative to its inoperative position. It should be observed that in this operation the platform is moved out of contact with the floor and the casters are simultaneously projected from the base, thus permitting the machine to be rolled along the floor. In order to accomplish this I have provided caster arms 38, two of which are attached on each side of the base to pins 39 positioned in the side of the base. The caster arms are arranged to rotate about the pins 39 and are held in position by cotter pins 40. Caster sockets 41 are positioned on the outer end of

the caster arms 38 and arranged to support casters of any suitable type, indicated generally by 42. Slots 43 having slidable engagement with the eccentric pin 34 of the crank 33, are positioned on the inner end of each caster arm. When the platform 25 is rotated from its operative position to its inoperative position the crank 33 will be rotated moving the eccentric pin 34 to the upper position in slots 43 and raising the inner ends of the caster arms 38. When this occurs the caster sockets 41 will be moved downward projecting the casters 42 through openings 44 in the motor board 20, as shown in dotted lines in Fig. 3. Projection of the casters 42 cause the lower edges 18 of the base to be lifted free from the floor as indicated in dotted lines in Fig. 3. The whole machine may then be rolled along a level surface as will be obvious.

In order that the platform 25 may serve to stabilize the base 10 and hold it fixedly to the floor under the weight of the user during the operation of the machine, I have provided means for fixedly securing the platform to the base when the platform is in its operative position. To this end a crank 45 having a finger knob 46 is rotatably positioned in the front wall of the base 10 through a pin 47 fixedly connected to the crank. The inner end of the pin 47 is fixedly connected to a cross-bar 48 which is provided with a crank pin 49 on each end. The crank pins 49 engage slots 50 and 51 formed on the inner end of the rods 52 and 53, the rods being positioned on substantially the same horizontal center line. The slot 50 extends upward from the center line and the slot 51 extends downward therefrom in substantially the same plane. Cotter pins 54 maintain the crank pins 49 within the slots 50 and 51. The rods 52 and 53 are slidably positioned in bearings 55 and 56 attached to the front wall of the base 10, and have their outer ends 57 and 58 slidably positioned in openings 59 and 60 in the side wall of the base 10. Referring to Figs. 1 and 2, it will be seen that when the crank 45 is turned in a clockwise direction the bar 48 will be similarly turned, the pins 49 moving along the slots 50 and 51 and drawing the rods 52 and 53 inward, whereby the ends of the latter 57 and 58 will be drawn out of the openings 61 and 62 of the arms 31. In like manner when the crank 45 is turned in a counter-clockwise direction the rods 52 and 53 will be projected outward into the openings 61 and 62 of the arms whereby the platform 25 is held firmly in its operative position. When the rods 52 and 53 are withdrawn from the openings 51 and 62, as previously described, the platform 25 may be rotated to the dotted line position shown in Fig. 1. The casters 42 are simultaneously projected downward lifting the base from

the floor, thereby permitting the machine to be moved over the floor with ease.

While the upright portion of the machine may be of any desired shape I have arranged to provide two pipes or tubular members, indicated generally by 63 and 64, having their lower ends positioned in the threaded openings 14 of the base 10, in such wise as to receive the parallel flights of the belt 24 coming from the pulley 23. A head, designated generally by 65, is positioned on the upper end of the tubular uprights, as shown in Fig. 5. The lower end of the head 65 is provided with two split collars 66 and 67, the collar 66 being arranged to slide over the top of the cylindrical upright 63 and the collar 67 being arranged to slide over the top of the upright 64. Each of the collars 66 and 67 are provided with a projection 68 having a tapped and threaded opening 69 and a projection 70 through which the bolt 71 may pass. The bolt 71 is provided with a shank 72 arranged to bear against the projection 70 whereby rotation of the bolt will cause the collar to be drawn together, tightening the collar about the upper end of the upright 63 or 64. The bolts 71 are provided with extensions 73 upon which various accessories used with the machine such as the strap or belt may be hung, the extensions also serving as handles to be grasped in moving the device around. Screw threaded sleeves 74 and 75 are positioned about the uprights 63 and 64 near their upper ends and thread thereon as at 76. The collars 66 and 67 slide down over the end of the uprights 63 and 64 until they come in contact with the upper edges of the screw sleeves 74 and 75. The bolts 71 are then tightened, thereby tightening the head 65 upon the uprights 63 and 64. However, should the belt 24, presently to be described, become loose the bolts 71 may be loosened, thereby loosening the head 65 on the uprights 63 and 64. The screw threaded sleeves 74 and 75 are then turned to raise the head 65 to tighten the belt and place it under the desired tension.

The operating head, 65 which may be advantageously provided with side walls 77 and 78, a V-shaped front wall 79, and a removable rear wall 80 is positioned upon the uprights 63 and 64 as already indicated. A web 81 is formed on the inner face of the head 65 and serves to support a bearing 82 within which a shaft 83 is journaled. A pulley 84 is fixedly positioned on the rear end of the shaft 83 by means of a key 85 and nut 86 threaded on the rear end of the shaft 83, the bearing 82 and shaft 83 being so positioned as to support the pulley 84 vertically above the pulley 23 on the shaft of the motor 22 in the base 10. The motor 22 in the base serves to drive the pulley 84 through the belt 24 which passes upward through the hollow uprights 63 and 64. Idler pulleys 87 and 88 are posi-

tioned within the operating head 65 below the pulley 84 and to each side thereof and serve to direct the belt 24 inward so that the two flights thereof will operate in the hollow uprights 63 and 64 in substantially parallel relation, thereby preventing the belt from striking the sides of the uprights and permitting the uprights to be placed close together. The idler pulleys 87 and 88 are supported upon shafts 89 and 90 threaded into the front of the operating head 65 as shown in Fig. 5. The forward end of the shaft 83 is provided with a crank 91 and pin 92. The crank pin 92 has rotatable engagement with a bearing block 93 which in turn has slidable engagement with an offset sleeve 94, offset from the center of rotation of a rocker arm 95. By this arrangement rotary motion of the shaft 83 will be translated into horizontal oscillating motion at the sleeve 94. The rocker arm 95 is positioned in the front 79 of the operating head 65 in a slot 96. A pin 97 passing through ears 98 and 99 of the front 79, and through the rocker arm 95, permits the arm to rotate about its center at which point it is suspended by the pin 97, held in position by means of a set screw 100. Obviously, oscillating horizontal motion of the sleeve 94 will cause oscillating movement of the ends 101 and 102 of the rocker arm 95. A recess 103 is provided in the top of the bearing block 93 and has an opening 104 to the eccentric pin 92. This recess is arranged to hold a quantity of cotton or other absorbent material 105 which is saturated with oil whereby constant lubrication of the bearing is assured. A strap or band which is passed around the body of the user is adapted to be attached to the ends 101 and 102 of the rocker arm 95. It is through this strap that the oscillating movement of the arm 95 is transferred to the user. Since this strap forms no part of my invention it has not been described or illustrated, suffice it to say that depressions 106 are provided along the rocker arm to permit the ends of band or applicator to be attached at different distances from the center 97 to vary the throw of each oscillation. In use the strap applicator is wrapped about a certain part of the body. The user then draws away from the machine placing a tension on the strap whereby the oscillations are transmitted to the body.

Manifold advantages of my improved construction will have become apparent. The greater part of the weight of the machine lies within the confines of the base 10. In operation, this base is arranged to rest squarely upon the floor, the lower edges 18 thereof making contact with the floor. For this reason it will be seen that the device possesses a very low center of gravity. The platform 25 in its operative position is securely fastened to the base 10. The operator stands upon this platform when using the machine

and consequently holds the whole machine down upon the floor so that great strain imposed upon the ends 101 and 102 of the arm 95 do not tip the machine over. In some uses of the machine one foot of the operator will be placed upon the platform 25 and one foot upon the inclined face of the base, thus throwing the full weight of the body backward against the applicator. It will be clear that even in this position a portion of the body's weight rests on the platform and base and prevents the tension on the arm 95 from tipping the machine over. However, when the machine is not in use the lever 45 is rotated, releasing the platform 25 which may then be raised to its inoperative position. When this is done the casters 42 are automatically projected from the base 10, thus supporting the whole machine upon the casters and permitting it to be rolled about the floor at will. Through the screw threaded sleeves 74 and 75 provision is made for altering the tension upon the belt 24. Should the belt become loosened through use, the screw sleeves 74 and 75 may be moved upward, thus tightening the belt. It will be seen that because of the motor being positioned within the base 10, it is possible to substantially reduce the size of the operating head 65 beyond that otherwise possible.

All of the moving parts of the machine with the exception of the arm 95 are completely enclosed. There are no exposed parts from which the user may contract grease or dirt. Parts normally dangerously attractive to children such as the belt 24, are completely enclosed. It should be observed that a large percentage of the users of these machines are women who employ them in the home to keep their weight down. In many instances their duties involve the care of children, which must be done, among other times, when the machines are in use. It is, therefore, important that such a machine be so constructed as to be harmless to children playing about as well as to present no point from which they collect dirt and grease.

While I have thus described and illustrated a specific embodiment of my invention I am aware that numerous alterations and changes may be made therein without materially departing from the spirit of the invention and I do not wish to be limited except as required by the prior art and the scope of the appended claims, in which I claim:

1. A health exerciser comprising, a base, arranged to rest upon the floor and having its top formed to serve as a platform for the user, a head, an arm adapted to be oscillated, positioned upon said head, hollow upright means extending upwardly from the base for supporting said head upon said base with the arm disposed in a predetermined desired relation to the platform, a motor positioned with-

in said base and enclosed thereby, and means extending through said hollow upright supporting means connecting said motor and said arm to transmit motion thereto.

2. A health exerciser comprising, a base arranged to normally rest upon the floor, an operating head adapted to be supported above said base, a motor mounted on a fixed support within said base and having a pulley on its armature shaft, an arm positioned upon said head arranged to be oscillated about a central point, a pulley in said head, means operated by the pulley for oscillating the arm, a belt passing over said pulleys, at least one vertically positioned tubular upright arranged to support said head upon said base and enclose said belt, and means for adjusting the elevation of the head relative to the base whereby the tension on said belt may be varied.

3. A health exerciser comprising, a base arranged to normally rest upon the floor, a driving motor mounted on a fixed support in said base, a pulley positioned upon the armature shaft of said motor, an operating head adapted to be supported above said base, an arm positioned upon said head arranged to be oscillated, means including a pulley positioned in the head for oscillating said arm, a belt connecting said motor pulley and said last named pulley, at least one tubular upright arranged to support said head upon said base and enclose said belt, and a sleeve threaded upon said tubular upright serving normally to support the head thereon but also arranged when turned to raise or lower said head upon said upright and accordingly adjust the tension of the belt.

4. A health exerciser having an operating head, a supporting base adapted to normally rest upon the floor, at least one upright supporting said head upon said base, an operating mechanism positioned upon said head, and a motor arranged to drive said mechanism, one or more transporting members positioned in said base, a platform for the user movable from an extended operative position to a retracted inoperative position, and means operated in such movement of said platform for projecting said members from said base whereby said base is lifted from its normal position in contact with the floor and supported upon said transporting members to permit easy movement of the health exerciser from place to place.

5. In a health exerciser having an operating head, a base, and means for supporting the head upon the base, a plurality of caster arms pivotally positioned intermediate their ends within said base, casters positioned on one end of said caster arms arranged to be projected and retracted by movement of the opposite ends of said arms, a platform for the user movable from an extended operative position to a retracted inoperative position, and

means operated in such movement of said platform for simultaneously moving the free ends of said caster arms whereby said casters are simultaneously and uniformly projected or retracted to move said base between its normal position upon the floor and a position supported upon said casters.

6. In a health exerciser having an operating head, and means for supporting the head upon a base having the top front portion thereof formed outwardly and downwardly inclined relative to the head to serve as one platform for resting one foot of the user or for the user to stand upon, and a hinged platform upon which the user may stand or rest the other foot, connected to the base and arranged to move between an operative position in contact with the floor in front of the base when in use and an inoperative position above the base when not in use.

7. In a health exerciser of the character described, an operating head, a rocker arm adapted to support and actuate an applicator, a hollow base, hollow upright means for supporting the head upon the base, a motor mounted in the base, means operated by the motor and extending upwardly through the hollow upright support to operate the rocker arm, the base having a high rear portion to enclose the motor and having its front top portion inclined outwardly and downwardly relative to the head to provide a platform for the user, a second platform upon which the user may stand, arranged to move between an operative position in contact with the floor in front of the base in a predetermined desired relation to the aforesaid platform and an inoperative position above the base, and means for pivotally supporting the platform upon the base.

8. In a health exerciser of the character described having an operating head, a base, and means for supporting the head upon the base, a plurality of casters positioned within the base adapted to be moved between a projected position wherein the base is supported thereon and a retracted position wherein the base rests upon the floor, a platform attached to said base adapted to move between an operative position in contact with the floor and an inoperative position above the base, said platform being arranged to permit the user to stand thereon when in its operative position, and means for causing said casters to be projected when said platform is moved from its operative to its inoperative position and retracted when said platform is moved from its inoperative to its operative position.

9. In a health exerciser of the character described having an operating head, a base, and means for supporting the head upon the base, a platform upon which the user may stand, pivotally connected to the base and arranged to swing between an operative position in contact with the floor in front of the

base when in use and an inoperative position above the base when not in use, and means for fastening the platform in its operative position whereby to prevent relative movement between the base and platform and prevent tipping of the device.

10. In a health exerciser of the character described, having an operating head, a base, and means for supporting the head upon the base, a plurality of casters positioned within the base adapted to be moved between a projected position wherein the base is supported thereon and a retracted position wherein the base rests upon the floor, a platform attached to said base adapted to move between an operative position in contact with the floor in front of the base and an inoperative position above the base, said platform being arranged to permit the user to stand thereon when in its operative position, means for causing said casters to be projected when said platform is moved from its operative to its inoperative position and retracted when said platform is moved from its inoperative to its operative position, and means for locking said platform in its operative position.

11. A machine of the character described comprising a hollow base arranged to rest upon the floor, an operating head above the base, a hollow support extending upwardly from the rear portion of the base for supporting the head, a motor mounted in said base below the hollow support, means extending upwardly from the motor through the hollow support to the head to transmit drive to the latter, said base having the rear portion thereof high enough to provide an enclosure for the motor but having the front top portion inclined downwardly to serve as a platform for the user to stand upon or rest a foot.

12. A machine as set forth in claim 11 including a platform pivotally mounted on the base to swing from an inoperative position over the base to an operative position resting on the floor in front of the base and in a predetermined relation to the inclined platform provided on the latter.

13. A machine as set forth in claim 11 including a platform pivotally mounted on the base to swing from an inoperative position over the base to an operative position resting on the floor in front of the base and in a predetermined relation to the inclined platform provided on the latter, and means for locking the pivoted platform rigid with the base in its operative position.

14. In a machine of the character described comprising a hollow substantially rectangular base, an upright on the base supporting a head for operating an exerciser applicator, a pair of levers pivotally mounted on each of the opposed side walls of the base carrying casters on the free ends thereof approximately at the four corners of the base, each pair of levers having their other ends extending to

ward each other, a platform having arms reaching alongside the base and pivoted to the side walls thereof to permit swinging movement of the platform from a position resting on the floor in front of the base to a raised inoperative position over the base, and means having connection with the adjoining ends of each pair of levers at the opposite sides of the base for communicating oscillatory movement to said levers in the swinging movement of the platform to raised position, whereby to project the casters on the levers below the plane of the base, so that the casters assume the weight of the machine and the same is rendered easily portable.

15. In a machine as set forth in claim 14 wherein the upright on the base is hollow, there being means for operating the head extended through said upright from the base, a motor in the base removable through the open bottom thereof from its position between the levers on the adjacent side walls, said motor having detachable connection with the aforesaid head operating means, and a support for the motor removably secured in the bottom of the base and constituting a closure for the open bottom of said base.

16. A machine of the character described comprising in combination a hollow base the top of which is formed suitably to serve as a platform for the user to stand upon, a motor mounted in the base and having a pulley on the armature shaft thereof adjacent the rear wall of the base, a pair of tubular head supporting members mounted on the base in parallel relation to one another having the two flights of an endless belt extended there-through for operative connection with said pulley, and a head mounted on the upper ends of said members having a vibrating member carried thereon and a pulley for operating the same disposed therein with the belt operatively engaging the same.

17. A machine as set forth in claim 16, wherein the head is slidably received on the upper ends of the tubular supports, the machine including sleeves threaded on said supports below the head to support the same thereon, said sleeves being arranged to be turned in either direction to increase or decrease the tension of the belt by adjusting the elevation of the head as a whole with respect to the base.

18. A machine as set forth in claim 16 wherein the head has two split collar portions slidably adjustable on the upper ends of said tubular supports, said head being arranged to be adjusted as to elevation with respect to the base whereby to vary the tension of the belt, and means for clamping the split collar portions on said supports in the adjusted position of the head.

19. A machine as set forth in claim 16 wherein the head has two split collar portions slidably adjustable on the upper ends

of said tubular supports, said head being arranged to be adjusted as to elevation with respect to the base whereby to vary the tension of the belt, and means for clamping the split collar portions on said supports in the adjusted position of the head, the said means comprising screws for drawing together the split portions of said collars, said screws being elongated at the head portions thereof and extending laterally from opposite sides of the head and adapted to serve as handles in the transporting of the machine.

20. A machine as set forth in claim 14 including means on the front wall of said base cooperating with at least one of the arms of the pivoted platform for locking said platform in rigid relation to the base in the operative position of the platform.

In witness of the foregoing I affix my signature.

MICHAEL W. McARDLE.