An exercise device and method to strengthen muscles and develop Chi by moving guided handles along an orbital path. Weights may be added or weight may be adjusted. The handles are attached to an elongated member on one or more pivots attached by one or more rotating assemblies. Resistance may be added to increase the force required to move the stick member along a path.
ORBITING EXERCISE DEVICE AND METHOD

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an exercise device and method of use. More specifically, to a guided movement of weight at least partially around a pivot.

[0003] 2. Background Art

[0004] Tai Chi is a system of controlled movements which when properly executed is believed by many practitioners to develop the internal life energy or “Chi” of the practitioner. Tai Chi is suitable for all age groups, is non-jarring and can build stamina and strength. Tai Chi movements derive from a concept of “yin” and “yang” which roughly means opposing forces, smooth fluid controlled movements are a hallmark of Tai Chi. Learning the controlled Tai Chi movements is accomplished through repetitive practice.

[0005] Practitioners may engage in carefully executed non-jarring patterns of movement to develop greater balance and Chi. Tai Chi also can provide aerobic exercise, toning, strengthening and muscle development.

[0006] Strengthening or toning exercise methods and devices for the abdomen, trunk and other muscle groups are often jarring or require a user to support weight. Exercise which is stop—start—stop an not circular may place more stress on joints than circular exercises. It would be useful to engage in a guided non-jarring training and exercise to develop balance, tone and/or strengthen muscles. It would also be a desideratum to have a device to guide such movement.

SUMMARY OF INVENTION

[0007] An exercise method for a guided orbital movement of at least one user’s arms.

[0008] An exercise method for a guided roughly circular movement of at least one user’s arms.

[0009] A device with at least one hand hold or hand grip, movable at least partially around at least one pivot.

[0010] A device with at least one hand hold or hand grip, movable at least partially around at least one pivot.

[0011] A device with at least one hand hold or hand grip, movable at least partially around at least one pivot in a roughly circular path.

[0012] A device with at least one hand hold or hand grip, movable at least partially around at least one pivot in a roughly circular path. The roughly circular path may be adjustable to the position of a user.

[0013] An exercise method whereby a user moves at least one hand hold or hand grip around one or more pivots in a roughly circular path. Changes in the positions of a user (which may include, but is not limited to the arms, legs, and torso) relative to a hand grip or hand hold, may target different muscle groups.

[0014] Some exemplary implementations provide a force against which the hand grips or hand holds are moved.

[0015] Some exemplary implementations provide a resistance against which the hand grips or hand holds are moved. Resistance may be positive, negative or a combination thereof.

[0016] In some exemplary implementations the force a user moves the device to overcome may be fixed, selectable, variable or a combination.

[0017] In some exemplary implementations the resistance a user moves the device to overcome may be fixed, variable or a combination. The resistance may be adjustable or selectable.

[0018] At least one member connected to one or more hand holds or hand grips. The hand holds or hand grips being movably connected to the member and the member being movably connected to a support.

[0019] At least one elongated member supporting one or more hand holds or hand grips. The hand holds or hand grips being pivotally connected to the elongated member and the elongated member being movably connected to a support.

[0020] At least one guide body supporting one or more hand holds or hand grips. The hand holds or hand grips being movably connected to the guide body and the guide body being movably connected to a support.

[0021] At least one guide body supporting one or more hand holds or hand grips. The hand holds or hand grips being movably connected to the guide body and the guide body being rotationally connected to a support.

[0022] At least one guide body supporting one or more hand holds or hand grips. The hand holds or hand grips being movably connected to the guide body and the guide body being pivotally connected to a support.

[0023] At least one member supporting one or more hand holds or hand grips, the guide body being connected to at least one of a floor base, door or door frame.

[0024] Other features and advantages of the present invention will be set forth, in part, in the descriptions which follow and the accompanying drawings, wherein the specific descriptions are shown, and in part, shall become apparent to those skilled in the art upon examination of the following detailed description taken in conjunction with the accompanying drawings or may be learned by practice of the present disclosure. The advantages of the present disclosure may be realized and attained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] FIG. 1A is a side view of the guide body and head of an orbital exercise device.

[0026] FIG. 1B is a top view of the guide body and head of FIG. 1A.

[0027] FIG. 2 is a top view of a guide body and head of an orbital exercise device.

[0028] FIG. 3 is a top view of another guide body and head of an orbital exercise device.

[0029] FIG. 4 is a side view of a stand mounted orbital exercise device.
FIG. 5 is a front view of a door mounted orbital exercise device.

FIGS. 6A and 6B are views of a door frame mounted orbital exercise device.

FIG. 7 is a side view of another stand mounted orbital exercise device.

FIG. 8 is a side view of another guide body and head of an orbital exercise device.

FIG. 9 is a side view of another guide body and head of an orbital exercise device.

FIG. 10 is a side view of another guide body and head of an orbital exercise device.

FIG. 11 is a side view of another guide body and head of an orbital exercise device.

FIG. 12 is a side view of another guide body and head of an orbital exercise device.

FIG. 13A is a side view of another guide body and head of an orbital exercise device.

FIG. 13B is a side view of another guide body and head of an orbital exercise device.

FIG. 14 is a side view of another guide body and head of an orbital exercise device.

FIGS. 15-18 are front views showing guided exercises provided by an orbital exercise device.

FIGS. 19A-22B are front and side views showing a sequence of guided exercises provided by an orbital exercise device.

FIGS. 23-25 show various guided head pathways provided by an orbital exercise device.

FIGS. 26 and 27 are front views of head implementations for an orbital exercise device.

FIG. 28 shows a locking pivot implementation for an orbital exercise device.

FIGS. 29-29C show pivot engaging implementations for an orbital exercise device.

It should be appreciated that for simplicity and clarity of illustration, elements shown in the Figures have not necessarily been drawn to scale. For example, the dimensions of some of the elements are exaggerated relative to each other for clarity. Further, where considered appropriate, reference numerals have been repeated among the Figures to indicate corresponding elements.

DETAILED DESCRIPTION OF EMBODIMENTS

Detailed descriptions are disclosed herein; however, it is to be understood that the details are merely exemplary implementations of the disclosure, which may be achieved in various forms or combinations of forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for claims and as a representative basis for teaching one skilled in the art to variously employ the present disclosure in virtually any appropriately detailed structure.

Shown in FIGS. 1A and 1B is a guide body of an orbital exercise device 100 unmounted to a stand or frame support. Forming the device is a guide body 105, with pivoting joints 2000 movably affixed to a head 3000. Fastening parts connect the elements of the device. The weight of the head 3000 and/or guide body 105 can be used to provide a force or resistance against which a user (not shown) exercise against with the orbital device. The guide body 105 has a middle section 110 (shown in these figures as an elongated member, however a middle section may be constructed of straight, curved or any combination thereof. The guide body may be constructed of a material or combination of materials to be rigid, flexible, semi-rigid, or any combination thereof.

The middle section 110, shown in one aspect as an elongated member, has at least one first end 112 and a second end 114. Connected to each of the end 112 & 114 are pivoting joints 2000 which may be simple pivots or compound universal pivots 2100. A first pivot 120, which includes a pivoting joint 2000 and a shaft 122, connects the guide body 105 to a rotating assembly 2200. A pivoting joint is a joint between two things or parts that allow motion. The rotating assembly 2200 can be connected to an assembly base 2210 with a fastening part. The assembly base 2210 is shown with mounting holes 2212 therethrough. Within the rotating assembly are one or more bearings. Bearings may be frictional, or low friction. A non-inclusive list of bearings includes cylindrical, spherical, ball, taper roller, clutch, double row and single row.

A second pivot 130, which includes a pivoting joint and a shaft 132, connects the guide body 105 to another rotating assembly 2200 which is connected to the head base 3001 of the orbital device. Supported on the head 3000 are handles 3002, each handle may also be referred to as a hand grip or hand hold. Handles may be connected to the head base 3001 with mounts 3004. Handles may also be connected to the rotating assembly without a head base.

A second pivot 130, which includes a pivoting joint and a shaft 132, connects the guide body 105 to another rotating assembly 2200 which is connected to the head base 3001 of the orbital device. Supported on the head 3000 are handles 3002, each handle may also be referred to as a hand grip or hand hold. Handles may be connected to the head base 3001 with mounts 3004. Handles may also be connected to the rotating assembly without a head base.

A universal pivot couples two moving shafts or parts and allows freedom of at least some movement in multiple directions.

Shown in FIG. 4 is an exemplary orbital device 100, with a guide body 105, 200 or 300 body (including, but not limited to those shown in FIGS. 1A-3) and a head 3000 affixed to a floor base 4000. The first assembly base 2210 is mounted to the floor base 4000. In one aspect the attachment to the floor base 4000 is via a sleeve 4100 which fits over a floor base member 4200. The sleeve 4100 may be movable or fixed. Shown in FIG. 4 is a movable sleeve 4100 with a pin 4110 that fits into a corresponding guide 4210 through the floor base vertical member 4200 which is supported upright on a floor pad 4250. Those skilled in the art will recognize that the device can be connected to the floor base without a sleeve.

Shown in FIG. 5 is an exemplary orbital device 100, with a guide body 105, 200 or 300 body (including, but not limited to those shown in FIGS. 1A-3) and a head 3000 affixed to a door base 5100. The first assembly base 2210 is mounted to a door base 5100 which rests against a door 5110. The door base is suspended against the door 5110. Top
straps 5200 are affixed over the top of the door 5110 with connectors 5250. A bottom strap 5210 hold the door base 5200 from the bottom of the door 5210 with a connector 5250.

[0055] Shown in FIGS. 6A and 6B is an exemplary orbital device 100, with a guide body 105, 200 or 300 body (including, but not limited to those shown in FIGS. 1A-3) and a head 3000 affixed to a door frame 6000. A “U” shaped door frame mount 6100 with legs 6200 is affixed to a wall or door frame with fasteners insert through guides 6300. (Not shown are other useful mounts such as a clamping mount which can be tightened or loosened against a wall to door frame and which is known in the art.)

[0056] Shown in FIG. 7 is an exemplary orbital device 100, with a guide body 105, 200 or 300 body (including, but not limited to those shown in FIGS. 1A-3) and a head 3000 affixed to a floor base 4000 and supplemented with weights 7000 and/or 7100. The guide body weight 7000 is shown in an adjustable mount whereby the weight 7000 is connected to middle section 110 in a movable fashion. A latching connector 7200 is removably inserted into a guide in the weight to hold the weight at a fixed and selected distance “d” from the head 3000. The latching connector can be removed and the weight 7000 moved to another distance such as distance “d2” by reinserting the latching connector 7210 into another guide hole 7210. Altering the distance “d” changes the distance of the weight 7000 to the head 3000, which in-turn alters the force or resistance the user exercises against. Additional weights 7100 shown are fixable at or near the handles 3002.

[0057] Shown in FIG. 8 is an orbital device with a telescoping guide body 400 movably affixed to a head 3000. The middle section 140 is a telescoping middle section comprised of an anchor section 142 and a moving section 144 with a rod guide 145 connected in a slideable fashion to a center rod 146, the center rod 145 and rod guide 144 may be circular, or have tracks, groves or be non-circular to inhibit rotation of the rod 145 within the rod guide 144. Conversely, those skilled in the art will recognize that a rotatable center rod — rod guide combination, whereby the center rod can rotate within the rod guide, can be used to construct the device with out a rotating assembly between the head and the middle section.

[0058] Shown in FIG. 9 is a guide body 500 movably affixed to a head 3000. The middle section 150 is a pivotal middle section. The pivotal middle section 150 is comprised of an anchor section 152 a rotating assembly 2000 and connector section 154.

[0059] Shown in FIG. 10 is a guide body 600 movably affixed to a head 3000. The middle section 110 of the guide body 600 is connected to a first curved pivot 160 which connects to a rotating assembly 2200. The second pivot 120 connects the guide body 600 to another rotating assembly 2200 and the head 3000.

[0060] Shown in FIG. 11 is a guide body 700 movably affixed to a head 3000. A curved support member 710 is affixed at one end to a rotating assembly 2200 and at the other end to a first pivot 120, the pivoting joint 2000 of the first pivot may be a simple pivot 2000 or compound 2100. The first pivot 120 is affixed via another rotating assembly 2200 to the head 3000.

[0061] Shown in FIG. 12 is a guide body 750 movably affixed to a head 3000. The weight of the head 3000 and or guide body may be selected, adjusted, or fixed. The weight of the head 3000 and/or guide body 750 can be used to provide a force or resistance against which a user (not shown) exercises against with the orbital device. The guide body 750 has an elongated middle section 110. The middle section has at least a first and second end with a pivoting joints 2000 connected at each end. The first pivot is compound 2100 the second pivot may be compound or simple may be simple pivots or compound 2100. A first pivot 120 connects the guide body 750 to a pivot base 755 which can be affixed to a support (not shown) to anchor the device for use. The second pivot 130 connects the guide body 110 to a rotating assembly 2200 to which handles 3002 are connected. Handles may be indirectly connected or directly connected. Indirect connection may be achieved via a head base 3001 or other member supporting the hand grips. Direct connection may be with the rotating assembly affixed to one or more hand grips, each handle may also be referred to as a hand grip or hand hold. The illustration of a head base is not a limitation and those skilled in the art will recognize that a variety of attachments to achieve the connection between one or more handles or hand grips to the guide body are possible. Connections or attachments, fixed, adjustable and/or removable are within the scope of this disclosure.

[0062] Variations in placement, size, combinations and or number of pivots, handles, weights, rotating assemblies, bases, heads, middle sections, and pivoting joints are possible. The within described exemplary implementations are not intended to be an exhaustive list of variations.

[0063] Shown in FIG. 13A is a guide body 800 movably affixed to a head 3000. The middle section 175 an elongated member with a pivot 810 affixed to each end. The pivot is shown as a spherical element. The pivot is formed in a shape suitable which to movably mate with a pivot ball cup 815. The head base 3001 is affixed to one pivot ball cup 810.

[0064] Shown in FIG. 13B is a guide body 800 movably affixed to a head 3000 with adjustable guide body weight 7000 connected to middle section 175 in a movable fashion. A latching connector 7010 is removably inserted into a guide in the weight to hold the weight at a fixed and selected distance from the head 3000. The latching connector can be removed and the weight 7000 moved to another distance by reinserting the latching connector 7010 into another guide hole 7210. Altering the distance of the weight 7000 from the head 3000 alters the force or resistance the user exercises against. Added head weights 7100 are fixable to the head 3000.

[0065] Shown in FIG. 14 is a guide body 850 movably affixed to a head 3000. The middle section 851 is a telescoping section comprised of an anchor section 852 and a moving section 182 with a rod guide 183 connected in a slideable fashion to a center rod 184. The center rod 184 and rod guide 183 may be circular, or have tracks, groves or be non-circular to inhibit rotation of the rod 184 within the rod guide 183.

[0066] FIGS. 15-18 show methods of guided exercise using an orbital device 100. An orbital exercise device affixed to a floor base 4000 or other floor supported base has an attached head 3000. By moving the head 3000 along a horizontal path along the path of arrow 8000, 8100, 8200.
and/or 8300. The placement of the users body not shown) in relation to the device can be used to isolate or target muscle groups in areas such as the abdomen, arms or trunk. The head 3000 may be held with one or both hands during exercise.

[0067] FIGS. 19A-22B show a front and side sequential view of a method of exercise using the orbital device 100. methods of guided exercise using an orbital device. An orbital exercise device affixed to a floor base 4000 or other floor supported base has an attached head 3000. A user grasps the head 3000 of the orbital exercise device 100 with one hand 900 or both hands. By moving the head 3000 along the path of arrow 8500 a circular movement is achieved. FIGS. 23-25 illustrate a cone of movement 9000-9200 for an orbital device 100 attached to a floor base 4000. The head 3000, in addition to being movable in a guided circular fashion is also movable in larger or smaller circular paths 9100 and 9200 which may change during use or during any part of a circular movement of the head 3000. In addition, the head 3000 may be moved in a complex way of arrow 9000. The method of exercise may be the completion of multiple orbits in circles or a smaller arc.

[0068] FIGS. 26 and 27 show other implementations of the head 3000 and handle combinations. A third handle 3005 may be added. The handles may be directly connected to the rotating assembly 2200, or the handles 3002 may be indirectly connected to a head base 3001 which is connected to the guide body and/or the rotating assembly 2200. Handles 3002 may be separately rotatable. Shown in FIG. 27 are handles 3002 fitted to a rotatable base 3010 within handle guides 3012.

[0069] FIG. 28 shows another rotating assembly 2200 implementation. Beneath the bearing cover 2202 is a bearing (not shown) shown with an extended bearing shaft 2203. In FIG. 29 two bearings are shown connected to the bearing shaft 2203. The number of bearings 2005 affixed to the bearing shaft 2003 may be varied according to the design parameters which may include variables, including but not limited to, load, size, and intended usage. In FIG. 28 a bearing stop is shown. A stand-off 2206 extended from the bearing cover supports a movable pin 2207. The removable pin 2207 is removably insertable into pin guides 2008 forming on the bearing shaft 2003 whereby the rotation of the bearing shaft (and attached guide body as shown in FIG. 4) is stopped. Bearing and shaft configurations are well known in the art. Therefore a more detailed description of the function of a bearing and shaft has been omitted from this disclosure.

[0070] In FIG. 29A-29C various resistance implementations are shown. FIG. 29 shows the bearing shaft 2003 support by two bearings 2005. FIG. 29A shows a friction belt 9300 applied against the bearing shaft 2003. One end of the friction belt 9301 is fixed; the other end of the friction belt 9302 is tightly affixed to a movable shaft 9304. Such belt tightening mechanisms are well known in the art. Therefore a more detailed description of the function of a friction belt and tightening mechanism has been omitted from this disclosure.

[0071] FIG. 29B shows a braking member 9400 applied against the bearing shaft 2003. A braking member may be set at a fixed pressure (or friction) or may be controllably varied. Braking members against shafts are well known in the art. Therefore a more detailed description of the function of a brake against a shaft has been omitted from this disclosure.

[0072] FIG. 29C shows magnetic members 9500 applied against the bearing shaft 2003. A magnetic member 9500 generates a magnetic field 9600 to the bearing shaft 2003, which is constructed of a material that is effected by magnetic fields. The magnetic field can be used to apply frictionless resistance to the bearing shaft 2003 and in turn to apply a resistance to the orbital device 100. Magnetic fields are a function of the strength of the magnet and the distance of the magnetic member to the bearing shaft 2003. The distance of the magnetic field may be varied or fixed. Magnetic resistance against shafts is well known in the art. Therefore a more detailed description of the function of magnetic resistance has been omitted from this disclosure.

[0073] Although the frictional and frictionless resistance is shown applied to a bearing shaft within the rotating assembly, force may be applied to the guide body at the elongated member and/or the second rotating assembly in lieu of, or in addition to, applying force to the bearing shaft of the first rotating assembly.

[0074] Affixed or connected parts or elements described above may be affixed in a removable fashion, directly or indirectly. Fastening parts may be used to affixed of connected parts or elements. Fastening parts encompasses a wide variety of elements, including but not limited to adhesives, screws, pins, rivets, bolts, holes, guides, joints, seals, welds and other intermediary parts that connect or affixed one element to another in the devices shown.

[0075] Since certain changes may be made in the above apparatus without departing from the scope of the invention herein involved, it is intended that all matter contained in the above description, as shown in the accompanying drawing, shall be interpreted in an illustrative, and not a limiting sense.

I claim:

1. An exercise device comprising:
   at least one handle affixed to a first rotating assembly;
   an elongated member with at least a first and a second end;
   a first pivot affixed between the first rotating assembly and the first end of the elongated member;
   a second pivot affixed to the second end of the elongated member; and,
   a second rotating assembly, mountable to a base, affixed to the second pivot.

2. The exercise device of claim 1 further comprising a base selected from the group consisting of floor base, door frame mount and door base.

3. The device of claim 1 further comprising a third pivot on the elongated member between the first and the second pivot.

4. The device of claim 1 wherein the elongated member is telescoping.

5. The device of claim 1 further comprising one or more weights attached to the device.

6. The device of claim 1 further comprising a head fixed between the handles and first rotating assembly.
7. The device of claim 5 wherein at least a portion of the weights are adjustable on the device relative to at least one pivot.
8. The device of claim 1 wherein a frictional resistance is applied to the device.
9. The device of claim 1 wherein a frictionless resistance is applied to the device.
10. An exercise device comprising:
    an elongated member;
    at least one handle movably affixed to the elongated member;
    at least one pivot affixed to an end of the elongated member; and
    a rotating assembly, mountable to a base, affixed to another end of the elongated member.
11. The exercise device of claim 10 further comprising a second pivot on the elongated member.
12. The exercise device of claim 10 wherein the elongated member is telescoping.
13. The exercise device of claim 10 further comprising one or more weights attached to the exercise device.
14. The exercise device of claim 10 further comprising a head fixed between the handles and the elongated member.
15. The exercise device of claim 10 wherein a resistance is applied to the device.

16. An orbital exercise device comprising:
    a base comprising:
    a floor pad to rest on a floor;
    a vertical member affixed to the floor pad and extending upward to which a guide body may be connected;
    a guide body, affixed to vertical member base, comprising:
    a head with at least one hand grip affixed to a first pivot;
    an elongated member affixed at a first end to the first pivot;
    a second pivot affixed to the second end of the elongated member; and
    a second rotating assembly affixed to the second pivot and to the base;
17. The orbital exercise device of claim 16 wherein the elongated member is telescoping.
18. The orbital exercise device of claim 16 further comprising one or more weights attached to at least one of the head and the guide body.
19. The orbital exercise device of claim 16 wherein a resistance is applied to the guide body.

* * * * *