WEIGHT LIFTING SANDALS

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ABSTRACT

A weight lifting system consisting of thin light-weight sandals to be strapped to a person’s shod feet, the sandals having additional parts that are designed to attach to and detach from corresponding hardware on weights and weight holding devices. The sandals are designed and built so they will not interfere with walking or other exercises. The hardware works quickly and easily and a plurality of different weights is preferred with the net result being that the user can quickly and easily pick up and put down weights with their feet, change the amount of weight, and change weights from foot to foot and, hence, can easily move from one exercise to another, and there is no need to remove the sandals when performing other exercises.
WEIGHT LIFTING SANDALS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of Provisional Patent Application No. 61/400,463 for Weight lifting sandals and their weights filed on Jul. 27, 2010 by Thomas Jay Zeek.

[0002] This application claims an invention that is shown in U.S. patent application Ser. No. 12/583,854 filed on Aug. 26, 2009 for “Weight Lifting Shoes” from Thomas Jay Zeek, and uses much of the same hardware that is shown and claimed in that application. The invention claimed herein first appeared in Provisional Application for Patent No. 61/191,171 filed on Sep. 4, 2008 for “Weight lifting shoes and their weights” from Thomas Jay Zeek.

FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT


SEQUENCE LISTING OR PROGRAM

[0004] Not Applicable.

BACKGROUND OF THE INVENTION

[0005] This invention pertains to weight lifting, specifically to a device that improves the quality and number of exercises that a person can do with their legs. It is a pair of sandals that enable the user to easily pick up and put down weights with their feet and to change weights quickly and they do not interfere with the user’s ability to walk or to do other exercises.

[0006] While exercises for the upper body have always been easy to do and plentiful, exercises for the legs have been fewer and much more difficult to coordinate. One of the reasons for this discrepancy is the simple ability of a person to pick up and put down weights with their hands, while no such ability exists for leg exercises.

[0007] This problem is normally addressed by the use of large expensive weight lifting machines. Machines called leg curl or leg extension machines take up a lot of room in the user’s house and are only good for a couple of exercises. Other weight lifting machines such as donkey kick machines are more expensive and for most people require a gym membership.

[0008] Many devices have been invented for attaching weights to the user’s ankles or feet to increase the number of exercises that can be done. Weighted shoes have been invented which don’t hurt the ankles like ankle weights but they make changing and removing weights difficult, and they hamper walking and other exercises because they remain heavy. U.S. Pat. Nos. 3,517,928 to Shanahan; 3,785,646 to Ruskin; and 6,052,924 to Sabat are examples of such shoes. Methods of adding weights to normal shoes include weights that tie into shoescases U.S. Pat. No. 5,632,709 to Walsh and a sort of sock that fits over the shoe U.S. Pat. No. 5,728,032 to Glass. In both of those inventions changing weights is time consuming and difficult. All of these inventions are hampered by the limited amount of weight they can employ.

[0009] Closer to the mark have been devices that attach to shoes and which in turn receive various amounts of weight, as in my current invention. U.S. Pat. Nos. 2,114,790 to Venables; 2,849,237 to Smithis; 3,343,836 to James; and 6,196,950 to Emrick are all examples of such devices. All of these devices are excellent while the user is actually doing the exercise. They all accommodate heavy weight and in one case the ease of changing weights rivals my own invention, but all have the same drawback, namely that they interfere with walking and doing other exercises.

[0010] U.S. Pat. Nos. 2,114,790 and 3,343,836 both use a very thick sole plate through which a dumbbell passes to add weight. The thickness of the sole plates makes walking awkward and makes other exercises awkward and dangerous as the user could easily “fall off their heels.” They would have to be removed when the user is switching between upper body and lower body exercises. U.S. Pat. No. 2,849,237 uses a thick sole plate as the actual weight and carries with it the same problems as above. U.S. Pat. No. 6,196,950 uses a thin sole plate but changing weights requires the user to fumble with individual weight plates instead of trading out the entire dumbbell. The sole plate is very rigid and flat and not at all conducive to walking.

[0011] U.S. Pat. No. 5,267,927 to Catanzano describes a similar device in which the sole plate is made up of a plurality of weights which can be thin but it is rigid and still awkward and is limited in the amount of weight it can incorporate. U.S. Pat. No. 2,214,052 to Good refers to an exercising boot “preferably made by casting suitable metal in a shaping form or mold.” It is intended to be worn in place of shoes and not over shoes and therefore will be difficult to fit properly. Its rigid design again makes walking and other exercises difficult and dangerous.

[0012] The best inventions heretofore that are suitable for heavy weights, allow quick and easy changing of weights, and consider the user’s ability to walk and to perform other exercises as well as the user’s safety are my own weight lifting shoes claimed in pending U.S. patent application Ser. No. 12/583,854 which uses much of the same hardware as the current invention, and U.S. Pat. No. 757,983 to Vaile, which discloses a shoe of substantially normal fit and construction with some parts added to accommodate the addition and quick removal of weights, even heavy weights. The mostly normal construction of both inventions provides comfort, safety, and convenience because they can be worn throughout the user’s workout and walking and performing other exercises is still possible, and they provide a solid dependable base for a person who is standing on one foot while exercising with the other foot.

[0013] Both inventions however still carry with them some drawbacks that need to be addressed.

[0014] The first drawback of Vaile’s invention as well as my own weight lifting shoes is that the shoes must be replaced as often as a person’s shoe size changes, which can be very expensive for a person whose feet are still growing.

[0015] Vaile’s design also has the drawback of having the weight over the toes of the user’s foot. This weight forward design forces the user to exercise their ankle and lower leg muscles and upper leg muscles at the same time. During lateral leg raises for instance the weight will put a twisting force on the user’s ankle. Being forced to exercise too many muscles at the same time reduces the effectiveness on the target muscles because the user will get tired before the target muscles have been fully worked. The weights will also have a tendency to hit the floor when the user is doing donkey kick exercises.

[0016] Vaile’s shoe and my own weight lifting shoes will also be more difficult to fit than the weight lifting sandals of this current invention. They would have to be offered in a
variety of odd widths which few retail stores would want to
stock, and they still wouldn’t offer a proper fit for everyone.
Many people require special shoes because of bone deformi-
ties in their feet, or need one shoe sole thicker than the other,
etc.

[0017] Consequently there remains a need for, and it is the
object of the current invention to provide a means for a person
to quickly and easily pick up and put down heavy weights
with their feet that is safe, does not hurt, does not hamper
walking or other exercises, is inexpensive, and easy to fit
properly.

BRIEF SUMMARY OF THE INVENTION

[0018] The current invention is a pair of thin, substantially
flat, rigid but flexible platforms in the shape of a shoeprint
further consisting of a heel yoke and straps to secure it to a
normally shod foot. They may be curved to fit the bottom of
a normal shoe and they have additional hardware that attaches
to corresponding hardware on weights and weight holding
devices.

BRIEF DESCRIPTION OF THE SEVERAL
VIEWS OF THE DRAWING

[0019] FIG. 1 is a top view of a weight lifting sandal of the
current invention.

[0020] FIG. 2 is a side view of a weight lifting sandal.

[0021] FIG. 3 is a perspective view of a weight lifting
sandal.

[0022] FIGS. 4, 5, and 6 show a weight lifting sandal prop-
erly strapped to a user’s shod foot.

[0023] FIGS. 7 and 8 show weight lifting sandals with open
back heel yokes and abbreviated tabs 32 which attach to
corresponding hardware on weights or weight holding
devices.

[0024] FIGS. 9A-B show a tab assembly which is an inte-
gral part of the sole of the sandals shown in FIGS. 1-6 and
FIGS. 19A-20C and which attaches to corresponding hard-
ware on weights.

[0025] FIGS. 10A-C show a peg assembly that can be used
in place of the tab assembly for use with the weight holding
device shown in FIG. 17.

[0026] FIG. 11 shows a weight holding device for use with
the tab assembly of FIGS. 9A-B and any shoe or sandal that
uses such a tab assembly.

[0027] FIG. 12 shows the weight holding device of FIG. 11
with normal harbell weights attached properly.

[0028] FIGS. 13, 14, and 15 are a top and two side views of
a weight holding device with locking pliers type clamps for
use with the tab assembly of FIGS. 9A-B and any shoe or
sandal that uses such a tab assembly.

[0029] FIG. 16 is a cross sectional view of the plunger 82
which is part of the locking pliers type clamp shown in FIGS.
13, 14, and 15.

[0030] FIG. 17 is a perspective view of a weight holding
device with hardware corresponding to the peg assembly
shown in FIGS. 10A-C and any shoe or sandal that uses such
a peg assembly.

[0031] FIGS. 18A-B show a weight and some attachments
for use with the tab assembly of FIGS. 9A-B and any shoe
or sandal that uses such a tab assembly.

[0032] FIGS. 19A-C show a sandal of this invention prop-
erly strapped to a user’s shod foot with a weight holding
device attached correctly.

[0033] FIGS. 20A-C show a person using the sandals of this
invention to perform various exercises.

[0034] FIG. 21 shows a perspective view from the front of
a shorter version of this invention wherein the front area of
the sandal is left off.

[0035] FIG. 22 shows a perspective view from the rear of
the same short sandal as FIG. 21.

[0036] FIG. 23 shows a top view of the short sandal of
FIGS. 21 and 22.

[0037] FIG. 24 shows an exploded side view of the short
sandal with several parts not shown.

[0038] FIG. 25 shows an exploded perspective view of the
short sandal with several parts not shown.

[0039] FIG. 26 shows the short sandal correctly strapped to
a user’s shod foot.

[0040] FIG. 27 shows the short sandal correctly strapped to
a user’s shod foot and weights correctly attached to the san-
dal.

DETAILED DESCRIPTION OF THE INVENTION

[0041] One embodiment of the sandal of the present inven-
tion is shown in FIG. 1 (top view), FIG. 2 (side view), and
FIG. 3 (perspective view).

[0042] The sandal 40a consists of a thin, rigid but flexible
and substantially flat main body 2 and has hardware that
attaches to corresponding hardware on weights and weight
holding devices. The sandal is made so that the hardware
protrudes at the sides when the sandal is strapped to a nor-
mally shod foot. The hardware in FIGS. 1-6 comes in the form
of tabs 6L and 6R which are part of a tab assembly 116 that
is shown in FIGS. 9A-B which is integrally incorporated into
the main body 2. Each tab has a notch 24 and a concavity 22
for accepting corresponding hardware that is attached to
weights or weight holding devices. The tab assembly 116 is
claimed in patent application Ser. No. 12/583,854 filed on
Aug. 26, 2009 for “Weight Lifting Shoes” by Thomas Jay
Zeek.

[0043] The sandal has a thin rubber sole 30 on the bottom
and a non-slip upper surface 28 that can be created by adding
a layer of a tough sandpaper type material of the kind nor-
mally found on the upper surface of skateboards. It has toe
clamps 26 toward the front end, with each said clamp having
a toe strap 16 with a toe buckle 14. The sandal also has a main
strap 8 and has a main buckle 10 to accept and hold the main
strap 8. The main buckle 10 is permanently attached to the
main buckle strap 12. The sandal also has a heel cup 4 which
has two crossing straps 18 permanently attached on either
side, which work in conjunction with the toe buckles 14. The
main strap 8 and the crossing straps 18 are hook and loop
straps that stick back to themselves after passing through
the buckles. The main body 2 has a front curve 3 to make it
fit the bottom of a normal shoe. It is desirable for the toe
clamps 26 to be adjustable for the width of a shoe, which can be
done in the same way as the heel yoke anchors 160 shown in
FIG. 25, or it can be done by making the toe clamps out of thin
flexible steel that can simply bend to fit wider shoes. FIGS. 4, 5,
and 6 show the sandal 40a correctly strapped to a user’s shod
foot.

[0044] The best material for the main body 2 including the
integral tab assembly 116 is polycarbonate, but a wide variety
of materials can be used including several kinds of metal,
plastic, fiberglass, or plywood, provided that the material isn’t
brittle and can be glued securely, or a variety of differing
materials can be used. All of the sandals shown in FIGS. 1-8
and 19A-20C have a main body 2 that is made of a single
piece of flexible but somewhat rigid material, but it is desirable to have most of the front curve 3 made of flexible rubber to allow the user to push his or her toes down toward the floor and to help the sandal to fit a wider variety of shoes.

[0045] If the open backed heel yoke 5 or the preferred adjustable heel yoke 150 is used then the heel area can be made of flexible rubber and can also be curved to prevent the heel from hitting the floor too soon when the user is walking. The open backed heel yoke 5 is shown in FIGS. 7 and 8 and the preferred adjustable heel yoke 150 is shown in FIGS. 21, 22, 23, and 26, and it’s described in paragraphs 0070-0073 below. FIGS. 24 and 25 show a rubber sole 182 that has a flexible thick rubber heel section and a similar design can be used for the front curve 3 of the full footprint sandals 40a and 40b.

[0046] FIGS. 4-6 show the sandal 40a correctly strapped to a user’s sholet foot 50.

[0047] Advantages of the full footprint design of the weight lifting sandals shown in FIGS. 1-8 and 19A-20C over the short sandals shown in FIGS. 21-27 include enabling the toe clamps 26 to be positioned farther forward, creating a smoother walking surface than the short sandals, and providing enough thickness to make the toe clamps 26 adjustable, whereas the short sandals are very thin at the front edge.

[0048] FIGS. 7 and 8 show a top and a perspective view of a sandal 40b that uses slightly different hardware to attach to weights. The tabs 6L and 6R are replaced by abbreviated tabs 32L and 32R. This can be made by simply sawing the ends off of the tabs 6L and 6R shown in FIGS. 1-6. The sandal 40b also has an open backed heel yoke.

[0049] FIGS. 9A-B show the tab assembly 116 that is an integral part of the sandal 40a. The tab assembly 116 consists of a body 114, two tabs 6L and 6R, and each tab has a notch 24 and a concavity 22 for accepting corresponding hardware that is attached to weights or weight holding devices. The concavity can be created by the addition of ordinary metal washers with notches cut into them 20 as shown here, or the concavity 22 can be created by drilling directly into the base material as is the case in FIGS. 21-26. The body 114 is made so that the tabs 6L and 6R protrude at the sides when the sandal is strapped to a normally sholed foot, and so it changes in size with the size of the sandal that it is a part of.

[0050] In the preferred embodiment the distance between the notches 24 in the tab assembly 116 would remain constant over several shoe sizes so that the distance between the posts 64 or 90 on the weights 100 and the weight holding devices 61a, 61b can remain constant. This would enable different members of a single household to share weights and weight holding devices or a single person to use the same weights while their feet grow and their shoe size changes, and retailers would not have to stock the weights in a large variety of sizes. About four sizes of tab assembly 116 should be plenty even if the main body 114 of the tab assembly changes with every shoe size.

[0051] FIGS. 10A-C show a top, front, and right side view of a peg assembly 117 that can be used to make the sandals of this invention instead of the tab assembly 116. The peg assembly 117 works in conjunction with the latch mechanism 131 shown in FIG. 17. The spacers 111 vary in thickness according to the size of the sandal so that a constant width is maintained for the same reasons described in paragraph 0050 regarding the tab assembly. The weight holding device 61c shown in FIG. 17 has two latch mechanisms 131 and the spacers 111 should abut both of them to prevent lateral movement of the sandal.


[0053] FIG. 11 shows a weight holding device 61a for use with the sandals 40a, 40b, and 40c. It consists of a 1" diameter bar 62 that is fitted with a platform 60 and two threaded posts 64 and two wing nuts 66. The approximate dimensions of the platform 60 are 7" in width, 2.5" front to back, and about 0.25" in thickness, although the thickness is only for strength and can vary according to the material it is made of. The other dimensions of the platform can vary according to the size of the sandal that is being used since the sandal needs to fit between the threaded posts 64, but the platform 60 and the distance between the posts 64 should be limited to a few sizes to match the few sizes of the tab assembly 116 for the reasons listed in paragraph 0050 above. The platform 60 also acts as a weight collar and prevents the weights 68 from moving any closer to the user’s sandal and maintains space for the user’s fingers to operate the wing nuts 66.

[0054] The bar 62 is of a standard diameter for accepting normal barbell weights 68 that are available at most sporting goods stores.

[0055] FIG. 12 shows the weight holding device of FIG. 11 with normal barbell weights 68 added to the bars 62. The weights 68 are held onto the bars 62 with ordinary weight clamps 70 which are available at most sporting goods stores. The user of this invention would ideally have several of these weight holding devices 61a with a different amount of weight on each or several weights 100 to completely obviate the need for fumbling with the barbell weights 68, but the invention is still very valuable for picking up and putting down the weight even if the user only has one.

[0056] The sandals and weights of this invention work by the user wearing the sandals as shown in FIGS. 4-6 and sliding the tabs 6L and 6R under the wing nuts 66 so that the notches 24 accept the threaded posts 64 and the concavities 22 are directly under the wing nuts 66. The user then tightens the wing nuts 66 into the concavities 22 until they are pressing firmly on the tabs 6L and 6R and are mostly surrounded by the washers 20. The weight 100 or weight holding device 61a is now locked firmly to the sandal because the notches 24 will not allow the threaded posts 64 to move left, right, or back; the washers 20 reach around the wing nuts 66 and will not allow them to move forward; and the wing nuts 66 will not allow the tabs 6 to come up off of the platform 60. Additionally, the thin rubber laminate 30 on the bottom of the tab is being pressed firmly to the platform 60 which creates friction preventing any horizontal movement of the sandal on the platform. The user is now free to lift his or her foot and hence the weight in any manner they desire.

[0057] After performing the desired number of repetitions of a given exercise the user can quickly and easily remove the weight by loosening the wing nuts 66 and sliding their foot back off of the platform 60. The user can then attach the weight to their other foot or attach a different weight to the same foot and continue exercising, or they can leave the weights off and do some upper body exercises with no weights attached to their feet. The sandals will not interfere with pushups, sit ups, walking, or almost any other exercise.
The wing nuts 66 never need to be removed from the threaded posts 64, only loosened enough to provide clearance for the washers 20.

[0058] FIGS. 13, 14, and 15 show a top view and side views of another weight holding device 61b that can be used with the sandals of this invention. It replaces the threaded posts 64 and wing nuts 66 with smooth posts 90 and locking clamps 94. FIG. 13 (top view) lacks the locking nuts 86.

[0059] The locking clamps 94 work in the same way as Vise-grip® locking pliers and use most of the same components. With the locking clamps open as is shown in FIG. 14, the sandal 40a is slid onto the platform 60 so that the notches 24 accept the smooth posts 90. With the concavities 22 mostly encircling the smooth posts 90 and directly under the plunger 82, the user locks the locking clamps 94 down onto the tabs 6l. and 6R by pushing down on the thumb levers 80 which causes the plunger 82 to go down into the concavities 22. FIG. 15 shows the locking clamp 94 in the position for holding down on a tab. When the user wants to release the clamps they can simply pull up on the thumb levers 80. This weight holding device also works with the sandals 40b in FIGS. 7 and 8 and the sandals 40c in FIGS. 21-27.

[0060] The locking clamps 94 can be adjusted by means of the threaded rod 84. With the locking clamps 94 open as in FIG. 14 the user can slide the sandal 40a into position and depress the thumb levers 80. If the user determines that a clamp is too tight or too loose they can release the clamp and then twist the threaded rod 84 and close the clamp again. When the desired tightness is achieved the user should tighten the locking nut 86 which will hold the threaded rod 84 in place. Clamps of this type are available from Good Hand Inc., 7414 Paramount Blvd., Pico Rivera, Ca. 90606.

[0061] FIG. 16 shows a cross sectional view of the threaded rod 84 and plunger 82 from the locking clamp 94. This view shows the hole 96 which accepts the smooth post 90 when the plunger 82 goes down into the concavity 22. The smooth post 90 prevents the plunger 82 from moving on a horizontal plane and makes sure the plunger 82 goes in exactly the right place.

[0062] The hole 96 has to be deep enough to keep the smooth post 90 from hitting the top of the hole 96 because that would prevent the plunger 82 from fully descending into the concavity 22. There should always be some air space above the smooth post 90 when the locking clamp 94 is closed.

[0063] FIG. 17 shows a weight holding device 61c for use with sandals or shoes that have the leg assembly 117 shown in FIGS. 10A-C. The user wearing the shoes or sandals engages the latch mechanisms 131 by stepping down on them so that the pegs 110 are forced through the latches 112. The latches 112 have a spring and close automatically to hold the pegs 110 in place. The spacers 111 contact the sides of the latch mechanisms 131 to prevent any lateral movement by the shoe or sandal. The distance filled by the spacers 111 should remain constant over several shoe sizes for the reasons discussed in paragraph 0050 above. When the user of this device wants to release the shoe or sandal from the latch mechanisms 131 they only have to depress the latch levers 113L, 113R, and 112L and the latches 112 will move out of the way.

[0064] FIG. 18A shows a special weight holding device 100 designed specifically for use with the sandals of this invention or shoes with similar hardware. It has a curved bottom 102 to facilitate walking a few steps to or from a chair and it can be made of plastic filled with sand, concrete, lead, etc. or it can be made of a single piece of cast iron. The weight 100 can be made in various sizes. It has a threaded hole 190 on each end to receive the threaded bars 192 shown in FIG. 18B so that more weight can be added. The threaded bars 192 are of a standard diameter to accept normal barbell weights available at most sporting goods stores.

[0065] FIGS. 19A-C show the sandals 40a of this invention correctly strapped to the user’s shoe foot 50 with weights and weight holding devices attached in the proper way.

[0066] FIGS. 20A-C show a person using the sandals of this invention to perform various exercises.

[0067] FIGS. 21-23 show perspective views and a top view of the most preferred embodiment of this invention.

[0068] The short sandal 40c is made by leaving off the front curve 3 of the full sandal completely, allowing the ball of the user’s foot to contact the floor normally, and the sandal tapers to a very thin front edge to ease the transition from sandal to floor when the user is walking or performing other exercises. The front clamps 168 shown in these drawings are not adjustable because the sandal is too thin at the front to have room for any kind of mechanical devices, but they could be made out of thin steel which would allow them to bend around wider shoes. In these drawings they are part of the same piece of polycarbonate as the rest of the body 180 and are formed by being bent into the desired position. The front clamps 168 could also be left off entirely and the short straps could be attached directly to the flat part of the sandal’s body.

[0069] The front clamps 168 each have a short strap 170 with a buckle 158 to receive the long strap 154 which works by weaving back and forth across the user’s foot through the buckles 158. The long strap 154 is a hook and loop strap and sticks back to itself after passing through the buckle 158 on the heel buckle strap 156. FIG. 26 shows the short sandal 40c correctly strapped to a user’s foot.

[0070] The long strap 154 and the heel buckle strap 156 are attached to the heel yoke 150 with a circular shaped grommet 152 to allow adjustment of the angle of the straps. The grommets 152 should be loose enough to allow the straps to be adjusted but not to move freely. The same means can be used to attach the short straps 170 to the front clamps 158 or to attach the toe straps 16 to the toe clamps 26 on the full footprint sandal.

[0071] The heel yoke 150 is made of a single piece of polycarbonate 1.2" wide and 0.1" thick. It is made from an arc with a radius of 4" bent into the horseshoe shape that is shown. The open back design of the heel yoke allows it to fit a variety of different shoes, whereas a solid heel cup might contact the shoe at some low point and leave a gap at the top. The heel yoke 150 is held to the heel yoke anchors 160 with holding screws 162 which pass through the vertical slots 153. The vertical slots 153 allow the heel yoke 150 to be adjusted for height.

[0072] The heel yoke anchors 160 are made of polycarbonate 0.1" thick and have a horizontal slot 163 that the holding screws 162 pass through. The horizontal slot allows the holding screw 162 and hence the heel yoke 150 to slide forward and backward and the heel yoke 150 can be tilted forward and backward so that along with the height adjustment enabled by the vertical slot 153 it is fully adjustable and can fit any shoe within the sandal’s size range. The holding screws 162 should not have a circular head as shown because that will leave dents in the heel yoke anchor 160 which impede adjusting the heel yoke’s position, or the heel yoke anchors can be made of steel.

[0073] The holding screws 162 are held by the holding wing nut 164 which can be loosened to allow adjustment of the heel yoke and then tightened to hold the heel yoke in the
proper position. A more aesthetic holding nut is preferred to the holding wing nut 164, and a rubber washer can be added between the heel yoke and the heel yoke anchor to improve the hold. The heel yoke is held in place mostly by the straps. The screw and wing nut only keep the bottom end of the heel yoke from moving.

0074] FIGS. 24 and 25 show exploded views of the short sandal 40c without the rough surface 172 or the heel yoke 150 or any of the straps or buckles.

0075] The heel yoke anchors 160 fit into the deep recesses 174 in the body 180. The anchor adjustment screws 166 pass through the slots 167 in the bottom of the yoke anchors 160 and they fit into the threaded holes 175. When the short sandal 40c is fully assembled the heel yoke anchors 160 can be adjusted for a shoe’s width by loosening the anchor adjustment screws 166 about a half of a turn and then sliding the heel yoke anchors 160 into the desired position and then tightening the screws. In the preferred embodiment a steel T nut would be used to avoid damaging the threads in the threaded holes 175, and the body 180 of the sandal 40c might be about 2 mm thicker to provide more threads for the anchor adjustment screws.

0076] The covering plates 178 fit over the heel yoke anchors 160 and are glued into the shallow recesses 176 to create a flat surface for the rough surface 172 to be applied to. The depth of the deep recesses 174 is exactly equal to the thickness of the heel yoke anchors 160 so that the covering plates 178 will be in contact with the heel yoke anchors instead of all of the stress being born by the anchor adjustment screw 166.

0077] The screw 166 does not hold the covering plate 178 because the adjustment screw hole 179 is bigger than the head of the screw.

0078] The concavities 22 are created by drilling directly into the tabs 7R and 7L.

0079] FIGS. 24 and 25 also show the rubber sole 182 and the heel curve 184. The heel curve 184 is flexible and has a tighter radius than the bottom of almost any shoe, so that it will conform to the shape of the bottom of the user’s shoe. The heel is curved only to prevent the heel of the sandal from hitting the floor when the user is walking and because it is flexible it does nothing to help the sandal keep its position on the shoe. If the heel curve is too rigid it will tend to apply pressure to the heel of the user’s shoe during some exercises and tend to push the user’s shoe off. Instead the sandal hangs on by the heel yoke above the user’s heel where it will not tend to pull the shoe off.

0080] FIG. 26 shows the short sandal 40c correctly strapped to a user’s shod foot.

0081] FIG. 27 shows the short sandal 40c strapped to a user’s shod foot with weights correctly attached.

0082] Accordingly the reader will see that the sandals and weights and the various hardware of this invention will provide a method of lower body exercises that is effective, safe, easy to operate, low cost, and can be used and kept easily in a small room or apartment.

0083] Although the description above contains many specificities, exact descriptions of the sandals, of how they are secured to the user’s foot, and the hardware used to attach the weights to the sandals may be innumerable, and examples shown should not be construed as limiting the scope of this invention but as merely providing illustrations of some of the presently preferred embodiments.

REFERENCE NUMERALS USED IN DRAWINGS

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<td>open backed heel yoke</td>
</tr>
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<td>left tab</td>
</tr>
<tr>
<td>6R</td>
<td>right tab</td>
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<tr>
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<tr>
<td>40c</td>
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<tr>
<td>61b</td>
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I claim:

1. a sandal with a thin main body and a means of being secured to a person’s normally shod foot further consisting of parts that are designed to attach to and detach from corresponding hardware that has been added to weights and weight holding devices, said sandal having been designed and built to facilitate walking when no weight or weight holding device is present.

2. the sandal of claim one being curved to fit the bottom of a normal shoe

3. the sandal of claim one wherein its main body is flexible.

4. the sandal of claim one wherein said parts protrude from the sides of the sandal.

5. the sandal of claim two wherein its main body is flexible.

6. the sandal of claim two wherein said parts protrude from the sides of the sandal.

7. the sandal of claim three wherein said parts protrude from the sides of the sandal.

8. the sandal of claim five wherein said parts protrude from the sides of the sandal.

* * * * *