(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
05 July 2018 (05.07.2018)

WIPO | PCT

(10) International Publication Number
WO 2018/119492 A1

(51) International Patent Classification:
A63B 21/06 (2006.01) *A63B 15/00* (2006.01)

(21) International Application Number:
PCT/AU2017/051465

(22) International Filing Date:
27 December 2017 (27.12.2017)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2016905390 29 December 2016 (29.12.2016) AU

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

(54) Title: WEIGHTS SYSTEM AND BLADE APPARATUS

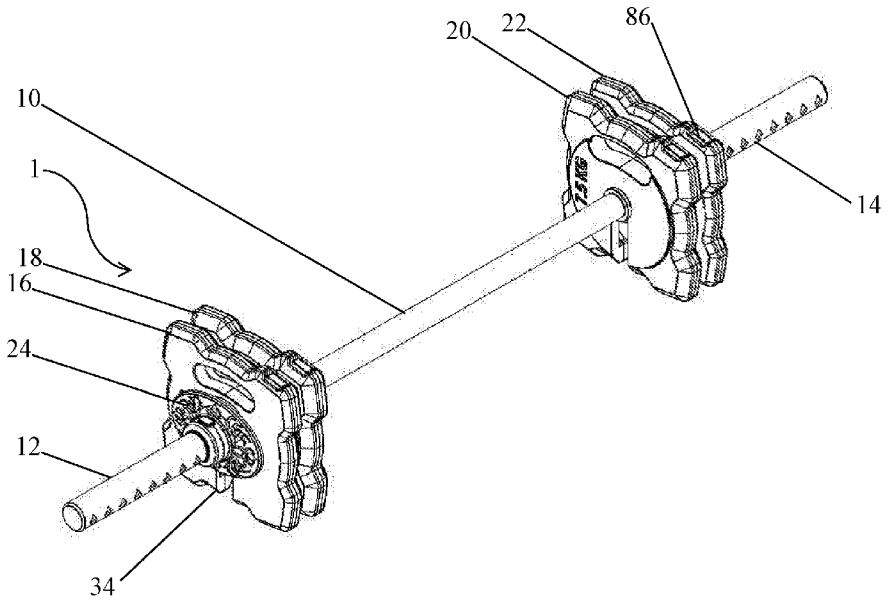

FIGURE 1

(57) Abstract: The invention relates to a weights system, for use with a bar, including a body, a weight means to give the weight system a useful weight for performing exercise and a lock and release mechanism. The lock and release mechanism is movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar. In use, the lock and release mechanism enables quick and easy exchanging, removal or addition of weight to the bar for use in a sequence of exercises. The invention also relates to use of the weights system with a blade. The invention also relates to a method of use of the weights system. The invention also relates to a method of use of the weights system and blade apparatus.

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TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*
— *with amended claims (Art. 19(1))*

WEIGHTS SYSTEM AND BLADE APPARATUS

FIELD OF THE INVENTION

The present invention relates to a weights system, and in particular to weights system for use with a blade apparatus.

Dumbbells with exchangeable weights are well known. A simple system is used where weights of an appropriate weight are threaded on to the bar, and held in place. The bar is generally threaded at the end portions so a threaded nut can be screwed on to maintain the one or more weights in place. During training and either progressively or when changing from one exercise to another it is usual to want to adjust the weights, to add or remove weights to add or lower the overall weight to be lifted.

One of the disadvantages to the known method of using weights and a bar is that to adjust the weights the screw holding all the weights in place must be loosened, threaded right off the end and the weights then removed or added to, to adjust the weight. Weights are balanced and so the laborious process must be repeated on the other side before the training can be resumed. Due to the time required it is often the case that a compromise weight is used, a weight suitable for several exercises, but not the optimal weight for training, simply to avoid the need to adjust the weight for every single exercise performed. The training time available may be short, and so these compromises are made to save time but degrade the quality of the possible training on muscle groups.

The inventor has developed a clever weight system that can be used to exchange the weights easily, and quickly so the correct weight can be used for an exercise and very little time or effort is required to make the change. The method does not required all the weights to be removed to make a change, instead one or more weight can be exchanged or removed, leaving other weights in place. The quick press in and release system is much quicker and simpler to use than any existing method, and much easier than conventional screw on fixings. It is anticipated that the invention will become the industry standard for gyms and other serious weight lifters, due to the adaptability and ease of use. The invention can be used to quickly perform weight exercises, including stand weight exercises, as well as through use of the blade form used as a “sword” like movement, with one or more weight to vary the training. The invention provides a new

form of exercises apparatus that can be used in a plethora of ways, some traditional some completely new.

Beneficial use of a sword in movement exercises, such as tai chi is well known. The sword is moved smoothly through sequences in the practise and the length and weight of the extended sword adds to the training of the exercise. Use of a metal sword in exercise classes, gym or at home by an individual is clearly not possible, or practical, in most situations. Even a blunt sword can cause injury or could be put to unsafe use and so would require to be locked away at the end of the session, which is inconvenient. It may not be possible to obtain a suitable sword to perform the exercises and if you do get one, it will not be able to be transported. Even travelling from home to a fitness class, it would be awkward, or possibly embarrassing, to take your favoured sword on the bus without some raised eyebrows, at the very least!

Use of a sword for movement exercises is most beneficial. The weight of the sword, as well as the extended length acts to increase the effort required to move through the sequences, as compared to moving the arm alone. The training on the arms, and core as the sword is held dramatically heightens the training effect of the movements when performed. The weight of the sword is fixed, however, and is generally very heavy for a beginner to hold extended for any length of time. It may be impossible for some people even to lift the sword, due to the weight and lack of experience in wielding a sword. The sequence of movements themselves require some training and practise. It is very difficult for a beginner, therefore, to learn the sequence of movements to be performed, as well as training their fitness and skills to be able to hold the weight of the sword. Some people may give the exercise a single try and find it must too difficult and not return. It would be most beneficial to have a fitness item that replicates the benefits of a sword, for sequences of movements but without the inherent disadvantages. It would also be desirable to be able to have an article for fitness movements that can be used like a sword but is adjustable in weight to make the exercises easier or more difficult to enable a novice through to an experienced user to perform the exercises. It would also be useful to have a versatile apparatus that can be used for weights, and separately blade with weight exercises.

The inventor has developed a weight system and blade apparatus as a surprisingly effective apparatus for a sequence of movements with adjustable weights. When used in

combination with the weights system the blade apparatus is a highly adaptable article that can be used for a very wide range of exercises. The adjustability of the weights mean that the difficulty and targeted muscles can be quickly and easily adjusted for a particular person. Further the adjustability means that highly tailored weight adjustments may be made at particular locations. This highly tailored and adaptable weighted blade provides a surprisingly effective exercise article, unlike anything seen before. The versatility and adaptability of the blade, weights and system open up numerous new exercise and performance possibilities for the user, to keep them engaged, interested and challenged in their training.

BACKGROUND OF THE INVENTION

The following describes a non-limiting example of the invention being used with reference to a weight system and blade apparatus as is a particularly advantageous use of the invention, and a preferred embodiment. However, the weight system may be used with a bar on any suitable means, not limited to the blade. The blade can also be used independently, with conventional weights, in an inferior form of the invention. The use of the blade and weight system is a most beneficial use of the invention, however.

For clarity, any prior art referred to herein, does not constitute an admission that the prior art forms part of the common general knowledge, in Australia or elsewhere.

It is an object of the present invention to provide a weights system that at least ameliorates one or more of the aforementioned problems of the prior art. It is a further, separate, object of the invention to provide a weight system and blade apparatus that ameliorates one or more of the aforementioned problems of the prior art. It is a yet further and separate object of the present invention to provide a method of use of a weights system.

DISCLOSURE OF THE INVENTION

Accordingly, the present invention provides a weights system, for use with a bar, the weights system including:

a body;

a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise;

a lock and release mechanism, contained within or otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby

the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar,

wherein the lock and release mechanism enables quick and easy exchanging, removal or addition of weight to the bar for use in a sequence of exercises.

The bar may be the bar of any suitable equipment. The bar could be the bar of a weight bar or dumbbell arrangement in some forms of the invention. The bar may have any suitable cross-section. The bar may be square in cross-section. The bar may be circular in cross-section. The bar may be any length suitable for use to perform the exercise. The bar may be a short bar similar to those used for dumbbell arrangements. The bar may be a longer bar similar to those used for weight lifting with two hands. Most preferably, the bar is adapted for use as a blade or sword for performing the movements.

Most preferably, the bar is the bar of a blade apparatus. The blade apparatus may take any suitable form. Preferably, the blade apparatus can be used similar to a sword to move through a sequence of movements. The blade apparatus may emulate any bladed instrument. The blade may emulate use of a sword, dagger or scimitar. The blade apparatus may include an end. There may be a central part to which an end and handle attach. A hilt or shield for the hand may be included with the handle. Any suitable hand protection may be included. Preferably, the weights system attaches about the bar or post of the blade apparatus. There may be a shaft or post to which an end and handle attach with weights between. The form of the blade apparatus may be varied to suit the particular application. Most preferably, the blade apparatus has a shaft or post with a circular cross-section and the weights system readily connects onto the rounded bar through use of the lock and release mechanism.

The body of the weights system may take any suitable shape. Preferably, the body is a convenient shape to fit about the bar. Preferably, the body includes a handle part that enables the weight system to be readily lifted and installed on the bar with one hand. The handle may take any suitable shape. Preferably, the handle is an incorporated cut-out through which a hand may be put to lift the body. Preferably, the weight system body can be easily picked up and exchanged in a single movement in one hand by use of the handle. Most preferably, the body is adapted to be easily handled and readily used to change the weights applied to the bar or blade apparatus.

The body may be formed in two halves joined during manufacture. The body may take any suitable form. Preferably, the body surrounds the lock and release mechanism. The body may be made of any suitable material. The body may include the weight means integrally from the weight of the material of which it is made. Alternatively, the weight means may be separate from the body. The body may be made of a metal material and the metal material body is the weight means. Other heavy items may instead be contained inside the body depending on the form of the apparatus. To give weight to the apparatus the body may contain items or may itself be made of a heavy material, or a combination of the two. In some cases the weight may be a low weight, but for a person starting out this will be sufficient for learning and training. For more experienced users very dense heavy materials may be used to give greater weight to the assembly in use.

The body may include a cover. A plastics or other suitable cover may be included to make the body more comfortable to handle. Preferably, the shape of the body is substantially square or rectangular. The body may be any suitable shape to fit about the bar. The shape of the body may form substantially cuboid as illustrated in the description with cut-outs for a handle, to slot on to the bar and for the release button.

The weight means may take any suitable form. Preferably, the body itself includes the weight means. Otherwise separate weight means may be included. The weight means may be metal parts. Any heavy material may be used instead.

The useful weight may be any suitable weight. The useful weight may be chosen from the group: 500 grams; 1 kilogram; 2 kilograms; 5 kilograms; 7.5 kilograms; or 10 kilograms, for example. Multiple weights or weight systems can be used to create the overall desirable weight. Small or large weights can be adjusted and used to suit the exercise. Further, the location of the weights, makes a difference to the difficulty and training of the exercise to be performed. Preferably, the location of the installation of the weights changes the nature and difficulty of the exercise to be performed. Preferably, the body may be installed at one or more location on the bar. Preferably, the body may be installed at a plurality of locations on the bar. Preferably, the lock and release mechanism enables the weight systems to be installed at a range of locations on the bar. Preferably, the lock and release mechanism enables the weight means to be installed at any suitable location on the bar. Preferably, more than one body is installed. Preferably, more than one body can be installed at more than one location. In one form of the invention up to

two weights can be installed at one or two locations. Most preferably pairs of weights can be used to adjust the weight at one of two locations on the bar or blade apparatus. Preferably, the blade apparatus includes a location for installation of the weight system. Preferably, the blade apparatus is adapted to have two locations, each for installation of weights and each location can take, two, one or none weights.

The useful weight may be any suitable weight to perform an exercise. The actual weight may depend on the person doing the exercise. Where the person is recovering from an illness or is elderly the weight may be lower than for a fit person training for high level sports. Again, the invention is very adaptable for a wide range of users and circumstances. The exercise may be any suitable exercise. The exercise may be used as a blade or sword to perform a sequence of movements.

The lock and release mechanism may take any suitable form. Preferably, the lock and release mechanism may be operated singlehandedly. Preferably, the lock mechanism and release mechanism can readily be operated between the two states with a single operation. Preferably, the lock and release mechanism enables very easy lock and release of the weight system on the bar such that multiple changes can be made throughout an exercise session without undue inconvenience.

The lock mechanism may include pushing the bar into a suitable slot on the body whereby the body is maintained on the bar. A moving part may be included, a moving part may be included that moves between a locked position and a released position. A bias spring may be included to assist in the moving of the moving part. The moving part may be held in a locked position once the bar has been pushed into the mechanism. The moving part may be held by a catch. The catch may include a projection that catches in a receiving part. The moving part may include the projection or the receiving part.

Most preferably, a single action of passing the bar into the body of the weight system and locking mechanism locks the weight onto the bar. The single action is preferably an easy action to perform with one hand.

Release may be achieved by any suitable means. Release may be achieved by pressing a button. The button may be connected to the lock release mechanism. Preferably, the button releases the catch so that the moving part can move freely and release the weight from the bar. A spring may be include to bias against the action of the button. Preferably,

a positive push on the button is required to release the catch. The release is intended to be quick and easy but for safety a positive action must be undertaken to release the weight so that the weight does not release accidentally.

In a most preferred form of the invention the lock mechanism works by pushing the weight on to the bar and a release button is included to release the mechanism so that the weight can be removed. A catch and moving part is preferably included with springs to bias the movements.

Preferably, the body includes a slot and the bar passes within the slot to be in contact with the lock mechanism and thereby locked to the bar. The slot may take any suitable shape. The slot is preferably configured to be a similar dimension to the bar and to surround it when in the locked state.

The retaining on the bar is preferably the retaining on the bar such that the weight is kept in place. Preferably, the weights are held firmly in place in the locked state so that they do not move while being used to perform a sequence of movements.

Preferably, the locked state is the strong hold of the weight in place on the bar. The locked state may also be the maintenance of the weight on the bar suitable for use to perform an exercise. Preferably, the released state enables removal of the body or weight from the bar.

Preferably, the ease exchange is such that it can be performed singlehandedly. Preferably, 4 weights can be exchanged within a minute ready for the next exercise. Preferably, the exchange enables a different weight program to be used for each and every exercise, if desired.

The sequence of exercises are preferably chosen from the group of those described in the description. Any suitable sequence of exercises may be included. The exercises may include squats, lunges, front raises or similar exercises in some forms of the invention. The sequence of exercises may be to emulate use of bladed weapon. The emulation may be of a stick or bar instead.

Preferably, the sequence of exercises are to emulate the use of a sword and move smoothly through a sequence of these exercise.

In one form of the invention there is a separate lock mechanism and a separate release mechanism, as would be understood this may be varied somewhat.

Accordingly, the present invention also provides a blade apparatus including:

an elongate part;

a handle part, associated with the elongate part such that when a person holds and moves the handle part the elongate part, correspondingly moves;

one or more weight that can be added to increase the weight of the fitness article, wherein, the blade apparatus can be used for moving through a sequence of movements, similar to those of using a bladed weapon, and the weights adjusted to increase or decrease the difficulty of performing the exercise.

Preferably, the blade apparatus is used with the weight system of the invention in any of its forms or variants.

Accordingly, the present invention also provides in a variant a weight system and blade apparatus including:

an elongate part;

a handle part, associated with the elongate part such that when a person holds and moves the handle part the elongate part, correspondingly moves;

one or more weight that can be added to increase the weight of the fitness article, including a body, a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise, a lock and release mechanism, contained within or otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar,

wherein the lock and release mechanism enables quick and easy exchanging, removal or addition of weight to the blade apparatus for use in a sequence of exercises emulating the use of bladed weapon.

Accordingly, the invention also provides a method of use of a weight system, the weights system including a body, a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise, a lock and release mechanism, contained within or otherwise associated with the body, the lock and

release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar, the method including the following steps:

a) choosing a weight to put on the bar;

b) aligning a slot of the weight with the bar;

c) sliding the slot of the weight on to the bar so as to engage the lock release mechanism;

d) locking the weight to the bar, the weight being maintained thereon until the release mechanism is used.

Preferably, the bar is a blade apparatus. Preferably, the release is actioned by pressing a button. Preferably, the blade apparatus with attached weight system may be used to perform a sequence of exercises.

Accordingly, the present invention also provides a method of use of a blade apparatus, the blade apparatus including an elongate part and a handle part, associated with the elongate part, the method including the followings steps:

a) Preparing the blade apparatus for use by adding one or more weight;

b) Conducting warm-up exercises

c) Moving the prepared fitness article through a sequence of moves to simulate use of a sword or dagger;

d) Repeating the sequences of moves a predetermined number of times;

e) Moving through other sequences as required for the class;

f) Conducting a warm-down.

Preferably, the blade apparatus is used with the weight system of the invention in any of its forms or variants. The blade apparatus and weight system are preferably used together to create a very useful sports tool, for training.

INDUSTRIAL APPLICABILITY

The blade and or weight system of the invention can be manufactured industrially and supplied to wholesalers, retailers or customers directly for sale and use.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described in connection with a non-limiting preferred embodiment with reference to the accompanying drawings, in which:

Figure 1 is a perspective view from above of a weight system and blade according to a preferred embodiment of the invention;

Figure 2 is a perspective view of the blade of Figure 1 with the weights removed;

Figure 3 is a perspective view of the blade of Figure 2 with the weights being attached to the blade;

Figure 4 is detailed cross-sectional view through the left-hand end of Figures 1 and 3, with the weights in a locked position;

Figure 5 is detailed cross-sectional view through the left-hand end of Figure 1 and 3 with the weights in a released position;

Figure 6 is a perspective sectional view, exploded view of the apparatus of Figure 5 in a released position;

Figure 7 is a perspective sectional view, exploded view of the apparatus of Figure 4 in a locked position;

Figure 8 is a plan view from above of a weight as used in Figures 1, and 3 to 7 in a locked position;

Figure 9 is a plan cross-sectional view of the weight of Figure 8 before attachment to the blade;

Figure 10 is a plan cross-sectional view of the weight of Figures 8 and 9 with the release/lock mechanism in a different position;

Figure 11 is a plan cross-sectional view of the weight of Figures 8 to 10 (reorientated), about to be attached to the blade;

Figure 12 is a perspective view of a weight being attached on to the blade with the weight shown in cross-section to illustrate the open lock/release mechanism;

Figure 13 is the perspective view of Figure 12 with the weight locked in place ready for use, in the manner of a sword;

Figures 14a, 14b, 15a, 15b, 16a, 16b, 17a, 17b, 17c, 18a, 18b, 18c, 19a, 19b, 19c, 20, 21a, 21b, 21c, 22, 23a, 23b, 24a, 24b, 24c, 24d, 25a, 25b, 26a, 26b, 26c, 27a, 27b, 28a,

28b, 28c, 29a, 29b, 29c, 30a, 30b, 30c, 31a, 31b, 32a, 32b, 32c, 33a, 33b, 33c, 34a, 34b, 34c, 35a, 35b, 35c, 36a, 36b, and 36c, are schematic move diagrams using the weighted blade of Figures 1 to 13, according to the method of the invention, showing the following movements:

Figure 14a and 14b an “attack movement”;

Figure 15a and 15b a “centre movement” to re-centre;

Figure 16a and 16b a “high circles movement”;

Figure 17a, 17b and 17c a “cross-slice movement”;

Figure 18a, 18b and 18c a “cross-slice high movement”;

Figure 19a, 19b and 19c a sequence of movements including an attack position, moving the blade down one-side laterally and finishing with the blade beside the body;

Figure 20 a “block movement”;

Figure 21a, 21b, and 21c three “elbow movements”;

Figure 22 a “figure of 8 movement” which can be performed either in front long ways, vertically, and narrowly or more laterally and horizontally across the body;

Figure 23a and 23b, a sequence including a jab followed by an upward movement, which can be performed on the spot or by stepping either foot forward;

Figure 24a, 24b, 24c and 24d a “round slice movement” including a central pose, moving around the head, either above, or in front or laterally;

Figure 25a and 25b a “double handed raise movement”, whereby the article is raised horizontally in both hands, which can be performed while standing or marching;

Figure 26a, 26b and 26c a “slice movement”;

Figure 27a and 27b a “stab movement”, moving the blade forward and down into a stab motion, which can be performed on the spot, stepping or lunging forward, including laterally with a side step or lunge;

Figure 28a, 28b and 28c a “chop” movement, moving the blade vertically up and then chopping down in front, finishing with the blade pointing to the floor;

Figure 29a, 29b and 29c a “lateral slice” movement, moving the blade from the central position the blade extends in a line parallel to the floor on either side, the move can be performed with a step or lung out to the side;

Figure 30a, 30b and 30c a “round slice laterally” movement, performed with the blade held high but the blade extends to the side instead of to the front, and can be performed on the spot or by stepping or lunging to out to the side;

Figure 31a and 31b a “defence” movement, which can be performed while stationary or stepping forward or back by bringing the blade above the head of the person on either side in a diagonal position as if blocking an overhead chop from an attacker;

Figure 32a, 32b, 32c a “lateral underhand chop” movement, which begins in the central position, and the arms and blade move to one side and continue in a circular motion towards the floor before moving up and in front of the person to shoulder height;

Figure 33a, 33b and 33c a “overhead chop” movement, which begins with the central position, and arms and blade move to one side and up and over in circular motion towards the front of the body of the person and finish in a chop movement at shoulder height in front, which can be performed on either side;

Figure 34a, 34b and 34c a “one handed lateral strike” movement, from the central position the blade moves horizontally to one side, one hand is released while the other hand extends laterally, before returning to central position, can be performed stationary or with a step out to one side;

Figure 35a, 35b and 35c is a schematic diagram of a “one handed front strike” movement, performed forward and with a step, as the body turns to one side one hand is released and the other hand with the blade fully extends in front at chest height; and

Figure 36a, 36b and 36c a “defence cross strike” movement, as if striking an opponent’s sword attack away from the body from top to bottom laterally, which can be performed on either side by moving into a defence position and then cross-slicing down until the blade points to the floor.

DETAILED DESCRIPTION OF THE INVENTION INCLUDING A BEST MODE

Referring to Figures 1 to 13, a preferred embodiment of the invention will be described, where weight system and blade apparatus 1, has bar 10 to which handle 12 and end 14 are attached on either side of the weight attachments 16, 18, 20 and 22. The weight system refers generally to the weights as attached to the blade, the blade including bar 10, handle 12 and end 14 and associated parts, which should be readily understandable from the drawings.

The weight system and blade apparatus 1 is generally made of stainless steel with the weights made of steel with a plastic coating for handling, the steel to give them sufficient weight to be suitable for training. In other forms of the invention the weights could be made of other metals, or other dense materials including plastics. Any suitable materials or combination of materials may be used with a plastic or other protective cover. Lighter weights can be used optionally for people of low start strength, with injuries, the elderly or young children.

Bar 10 is a long pole with a circular cross-section of stainless steel, strong enough to resist damaged or bending when in use with the weights attached. Other forms and shapes of cross-section may be used instead. Any suitable strong metal may be used instead for the bar too, and may be different if the weights are formed of a plastics material as a strong plastic material could then be used instead.

Weight attachments 16, 18, 20 and 22 are illustrated as 7.5 kilogram weights, to create a total weight of 30 kilograms when all four are in place. The weights attachments will be provided individually or in a full set in a range of weights. For example, weights attachments 16, 18, 20, 22 may be any of 2.5 kilogram, 5 kilogram, 7.5 kilogram used alone or in combination to make 5, 10, 15, 20, 25 or 30 kilogram combinations. Greater or lesser weights can be used to suit the particular use and application within the scope of the invention.

As can be seen in particular in Figure 2, holder 24 creates a handle for use in the manner of a sword of the blade with handle 12. Holder 24 assists to support the hand of the user, to push against the weight of the added weights when moving through the sequences. Shaft 26 and 28 are exposed when weights 16, 18, 20, 22 are not in place between handle 12, end 14 and bar 10, and stoppers 30 and 32. Stoppers 30 and 32 assist to support

weights 16, 18, 20 and 22, if in place. If only one weight is in place stoppers 30 and 32 are moved closer to handle 12 and end 14 respectively.

Each of weights 16, 18, 20 and 22 includes a slot 34, 36, 38 or 40 respectively, at it is through use of these slots over bar 10 that the releasable locking attachment is achieved through use of locking release mechanism labelled generally 42, 44, 46, 48.

Each weight 16, 18, 20 and 22 has a handle 50, 52, 54 and 56 to enable easy handling of the weights. The handle is a convenient shape to slip the hand through to pick up the weight and slide over bar 10 when attaching and locking in place before exercise Extra grip shaping, or soft cover could be included for these parts, to ease handling.

Bolts 58 hold the weights 16, 18, 20 and 22 together with locking release mechanism 42, 44, 46 and 48 safe inside only interacting through slot 34, 36, 38, 40. Bolts 58 are in the usual manner of two halves which may be secured together during manufacture.

Each of locking release mechanism 42, 44, 46 and 48 include the same parts, moving part 60, axle 62, cut-out 64, spring 66, connections 68, receiving part 70, connecting part 72, driving part 74, axle 76, spring 78, locking release mechanism 80 and pegs 82 and 84. Button 86 is the release mechanism to release weight 20 from being firmly locked on bar 10.The clever invention uses a very easy means of lifting weight 20 by handle 54, such that it can be lowered on to bar 10 and clicked in place with one hand. Pressing button 85 enables bar 10 to pass inside mechanism 46 to held firmly therewithin as described further below, and be removed single-handedly.

Each locking release mechanism, such as 46, has moving part 60 moveable between the locked position as illustrated in Figure 9 and the partially open position in Figure 10 and fully open position 11. Moving part 60 has axle 62 about which it arcs within receiving part 70, which can be seen in particular in Figure 10. Receiving part 70 shares the shape of moving part 60 and it is fully received therein during the locked position. In the open or partially open position moving part 60 is arced away from receiving part 70 about axle 62, and as it does so cut-out 64 also arcs. Cut-out 64 of moving part 60 is shaped similar to the cross-section of bar 10 so that it can be received therein in the fully open and moved position.

Spring 66 is attached at connection 68 of moving part 60. Spring 66 moves between an unsprung and tensioned state during the locked and release states. Spring 66 is unsprung when part 60 is in the locked position and tensioned when the moving part 60 is in other positions. In this way spring 66 is bias to hold moving part 60 in the locked position in use but can be readily pushed past by pushing up with bar 10 into slot 38 and cut-out 64. Once the bias of spring 66 is overcome then moving part 60 remains in place, locked about bar 10 due to connecting part 72 and 73 engaging as shown in Figure 9. The engagement is maintained until the release mechanism is activated by pressing button 86 to disengage connecting parts 72 and 73 so that moving part 60 is again free to move.

The locking of weight 20 is therefore very easily achieved even with one hand, and similarly can be very easily removed by depression of button 86. Locking release mechanism 80 can be seen to the side of locking and release mechanism 46 and interacts therewith by means of pegs 82 and 84.

Depression of button 86 pushes the button into a recess (not labelled) so that peg 84 is moved from the locked to open position. In the locked position of peg 84 corresponding peg 82 is in contact with connecting part 72 holding it in place on connecting part 73. On depression of button 86 connecting part 72 is not in contact connecting part 73 with moving part 60 so it can move freely. Figure 9 shows the tensioned position, locked in place, Figure 10 shows the released button and moving part 60 moveable. Spring 78 on axle 76 moves accordingly bias to enable the lock and unlock to occur smoothly. Optionally a blade button may be included to enable the disassembly and assembly of the blade parts, separate to the weights.

Once the weights as desired are in place the blade is ready to use. The nature of the blade is such that it may be desired in some exercises to put weights on towards the end as this creates a very strong training instrument when used with extended arms. Other exercises may vary the weights at either of the two locations for mounting weights. The blade can be used to perform cardio based exercises which may concentrate on blade like motions and separately weight movements, concentrating on use of the weight action for weight training. One of the many advantages of the invention in the versatility of being able to use for movements, and weighted exercises in a very wide range of forms to train in a very wide range of methods.

The invention is a very quick and easy means to exchange the weights with the push fit or release through use of a button, even performable with one hand. The simple method of use makes it easy to adjust the weights to be correct, and appropriate for each exercise of set of exercises to be performed. Use of other arrangements discourage the exchange of weights but the invention makes it quick and simple.

The blade arrangement is particularly beneficial as it enables use of the apparatus to work through sequences of movements similar to use of a sword. This use with extended arms, strong legs and firm core muscles creates a whole body exercise that can then target specific muscle groups. The use of the blade also creates an immensely satisfying exercise program as use of the sword shape is strong and empowering movement. The blade fitness moves can be summarised as follows:

Blade Fitness Base Moves:

1. Centre Position
2. Attack position
3. Chop (in front)
4. Cross Slice
5. Lateral slice
6. Round slice high
7. Round slice high lateral
8. Defence step
9. Stab
10. Elbow
11. Underhand lateral chop
12. Overhand lateral chop
13. One handed lateral strike
14. One handed front strike
15. Defence cross slice
16. Side-kicks with step
17. Figure of 8

In use the weight system and blade may be used in fitness programs for individual use, or for a class. The structure of the program may be summarised in example as follows:

Structure of workout: Program.

Verbal intro/demonstration of posture		1min
1. Warm up	(with blade for second half)	5mins
2. Blade Moves Introduction		5mins
3. Blade Combinations Track		5mins
4. Stretch/slow movement (tai chi inspired no blade)		1min
5. Aerobics, high energy		5mins
6. Leg and "glutes" track	(with weight on blade)	5mins
7. Blade Combinations track		5mins
8. Combat/boxing inspired track		3mins
9. Arms, chest and back work(weighted)		5mins
10. Abdominals (weighted)		5mins
11. Cool down/stretch	(tai chi/yoga inspired)	5mins
		52-55mins*

**Including intro, time for applying weights, pauses between songs etcetera. Weights are used throughout unless indicated otherwise, although this can be altered in different programs.*

There are numerous sequences and movements, including those listed above as base moves, and other moves that can be performed. Referring to Figures 14 to 36c given here are a selection only, for illustrative purposes. It is to be noted that clearly these are schematics and that the weights are not shown for ease of illustration. Other movements and sequences of movements can also be included within the scope of the invention. The weights are omitted from the illustrated blade movements so as not to interfere with the illustration of the movements themselves. In use at least one weight is generally attached, according to the invention before conducting the movements. The variation can vary the

difficulty of the particular movement, in particular if great weight is added at the extended location.

Figures 14a and 14b illustrate an “attack movement” which can be performed on the spot, or when stepping back. The pose, as illustrated starts with the weight system and blade apparatus 1 pointing straight up, close to the ear of the person, with strongly grounded feet, followed by a downward stab, while stepping back. Only the blade part is shown of apparatus 1 for ease of illustration. The attack movement is a move that gives the person a strong sense of empowerment and is likely to feature numerous times through the sequences.

Figures 15a and 15b illustrate a “centre movement” to re-centre after any of the moves, such as the “attack movement” of Figure 14a and14b by moving the blade from a straight-up position with feet apart to a feet together position. The “centre movement” may be used at the start and beginning of movements or between sequences to re-centre, and take a breath or mini-break before the next sequence is started.

Figures 16a and 16b illustrate a “high circles movement”, starting with the common straight up movement followed by movement of blade apparatus 1 in circles drawn with the end of the blade around the head of person (not labelled). The circles are ideally drawn high in the air but variants could be lower circles or out to the side, or a combination of these moves may be made in sequence.

Figures 17a, 17b and 17c illustrate a “cross-slice movement” moving through a diagonal slice from the straight up stance, upward point, in one way, before slicing down and across the body the other way, to form a cross shape in front of the body. The cross-slice would be another satisfying move to make to relieve tension and stress.

Figures 18a, 18b and 18c is very similar to the movement disclosed in Figure 11a, 17b and 17c, but shows a “cross-slice high movement” whereby the cross slice movement is approximately parallel with the ground rather than pointing down into the ground.

Figures 19a, 19b, and 19cillustrate use of a sequence including an attack position, moving the blade down one-side laterally and finishing with the blade beside the body. Sequences of combinations of the moves disclosed is envisaged as well as modified forms for people who cannot perform the full movement.

Figure 20 illustrates a “block movement” which can be incorporated between attacking moves and centring moves, for example.

Figures 21a, 21b and 21c show three “elbow movements” on the spot, either side or while stepping forward, back or to the side. Use of the elbow, often elevated may form part of a number of the moves as a strength and control exercise. As shown the straight up move includes high elbows followed by a move to ones side with high elbows and then the other. The move can be combined with other moves.

A “figure of 8 movement” is illustrated in Figure 22, as would be readily understood, although is difficult to illustrate. The movement of Figure 22 will require skill, strength and control to perform and is performed while stationary. The movement can be performed in front of the person as illustrated or to the side and either in a wide, longways, or narrow form if performed vertically. Again, clearly, the moves can be varied and modified to suit the person, and their fitness.

Figures 23a and 23b illustrate a jab followed by an upward movement. These moves are more attacking moves, which can be performed standing on the spot, wide spread grounded feet or by stepping either foot forward in a lunge. Combinations of standing and lunge movements can be performed in a sequence to keep the person moving, exercising, and being interested in the ever changing moves.

Figures 24a, 24b, 24c and 24d show a “round slice movement” including a central, straight up pose as in many of the positions before the blade is swung around the person’s head, in an elevated position to slice around. The slice can be performed at a lower position for beginners and more slowly and carefully. More experienced users can perform the slice quickly in either direction.

Figures 25a and 25b show a “double handed raise movement”, of the weight system and blade apparatus 1. The move, is shown performed with a strong wide stance, but as with many of the others, could also be performed while marching.

Figures 26a, 26b, 26c illustrate a “slice movement”, another very satisfying and stress relieving movement using blade fitness article 1. After returning to the straight up centred position, the blade is elevated above the head of the person before being sliced down towards the ground at the side of the person.

Figures 27a and 27b show a “stab movement”, moving the blade forward and down into a stab motion. The move can be performed on the spot or stepping and lunging forward, or sideways for a lateral move. Again the attack moves assist to keep the movements positive and assist to relieve tension.

Figures 28a, 28b, 28c illustrate an attack “chop” movement, moving the blade vertically up and then chopping down in front, finishing with the blade pointing to the floor.

Figures 29a, 29b and 29c illustrate a “lateral slice” movement, moving the blade from the central position the blade extends in a line parallel to the floor on either side, again an attack move. The move can be performed with a step or lunge out to the side.

Figures 30a, 30b and 30c are schematic diagrams of a “round slice laterally” movement, similar to the round slice of Figures 29a, 29b and 29c, performed with the blade held high but the blade extends to the side instead of to the front, and can be performed on the spot or by stepping or lunging to out to the side.

Figures 31a and 31b show not an attack but a “defence” movement, which can be performed while stationary or stepping forward or back. The blade is brought to be above the head of the person on either side in a diagonal position as if blocking an overhead chop from an attacker.

Figures 32a, 32b and 32c show another attack move a “lateral underhand chop” movement. The chop begins in the central position, and the arms and blade move to one side and continue in a circular motion towards the floor before moving up and in front of the person to shoulder height.

Figures 33a, 33b and 33c is another form of chop the “overhead chop” movement, which begins with the central position. The arms and blade move to one side and up and over in circular motion towards the front of the body of the person. The move finishes in a chop movement at shoulder height in front, which can be performed on either side of the body of the person.

Figures 34a, 34b and 34c show a “one handed lateral strike” attack movement. From the central position the blade moves horizontally to one side, one hand is released while the

other hand extends laterally, before returning to central position. The one hand lateral strike can be performed stationary or with a step out to one side.

Figures 35a, 35b and 35c illustrate a different strike a “one handed front strike” movement, similar to Figures 34a, 34b and 34c but performed forward and with a step. As the body turns to one side one hand is released and the other hand with the blade fully extends in front at chest height of the person.

Figures 36a, 36b and 36c show a “defence cross strike” movement, as if striking an opponent’s sword attack away from the body from top to bottom laterally, which can be performed on either side by moving into a defence position and then cross-slicing down until the blade points to the floor.

The movements here and others could be adapted for use of a shorter blade such as a dagger. More jabs and stabbing movements could be incorporated to the movement as appropriate. The arm movements would be much the same, but with reduced weight and length.

Clearly, a fun and rewarding workout can be achieved in use of the invention, which can be varied somewhat, these being useful illustrative examples. The inventor has developed a versatile, adjustable product and method that is likely to be very well received once available to the public, for all skill ranges. The ready adaptability, through use of the adjustable weight system enables the same article to be used by a person from their first lesson through to being highly skilled and perhaps teaching others.

It will be apparent to a person skilled in the art that changes may be made to the embodiment disclosed herein without departing from the spirit and scope of the invention in its various aspects.

REFERENCE SIGNS LIST:

1	Weight system and Blade Apparatus	48	Locking/release Mechanism (22)
10	Body	50	Handle (16)
12	Handle LHS	52	Handle (18)
14	End	54	Handle (20)
16	Weight attachments	56	Handle (22)
18	Weight attachments	58	Bolts
20	Weight attachments	60	Moving part
22	Weight attachments	62	Axle
24	Holder	64	Cut-out
26	Shaft	66	Spring
28	Shaft	68	Connections
30	Stopper	70	Receiving part
32	Stopper	72	Connecting part
34	Slot (16)	73	Connecting part
36	Slot (18)	74	Driving part
38	Slot (20)	76	Axle
40	Slot (22)	78	Spring
42	Locking/release Mechanism (16)	80	Locking release mechanism
44	Locking/release Mechanism (18)	82	Peg
46	Locking/release Mechanism (20)	84	Peg

THE CLAIMS:

1. A weights system, for use with a bar, the weights system including:

a body;

a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise;

a lock and release mechanism, contained within or otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar,

wherein the lock and release mechanism enables quick and easy exchanging, removal or addition of weight to the bar for use in a sequence of exercises.

2. The weights system of claim 1, wherein the bar is the bar of a blade apparatus.

3. The weights system of claim 2, wherein the blade apparatus can be used similar to a sword to move through a sequence of movements.

4. The weights system of claim 2, wherein the blade apparatus emulates a bladed instrument.

5. The weights system according to any one of claims 2 to 4, wherein the blade apparatus includes an end.

6. The weights system according to any one of claims 2 to 5, wherein a central part is included to which an end and handle attach.

7. The weights system according to any one of claims 2 to 6, wherein a hilt or shield for the hand is included with a handle.

8. The weights system according to any one of claims 2 to 7, wherein the weights system attaches about the bar or post of the blade apparatus.

9. The weights system according to any one of claims 2 to 8, wherein the blade apparatus has a shaft or post with a circular cross-section and the weights system readily connects onto the rounded bar through use of the lock and release mechanism.

10. The weights system according to any one of claims 1 to 9, wherein the body is a convenient shape to fit about the bar.

11. The weights system according to any one of claims 1 to 10, wherein the body includes a handle part that enables the weight system to be readily lifted and installed on the bar with one hand.

12. The weights system of claim 11, wherein the handle is an incorporated cut-out through which a hand may be put to lift the body.

13. The weights system according to any one of claims 1 to 12, wherein the shape of the body is substantially cuboid with cut-outs for a handle, to slot on to the bar.

14. The weights system according to any one of claims 1 to 13, wherein the body includes the weight means integrally from the weight of the material of the body.

15. The weights system according to any one of claims 1 to 13, wherein weights are included in the body to provide the useful weight.

16. The weights system according to any one of claims 1 to 15, wherein the useful weight is chosen from the group: 500 grams; 1 kilogram; 2 kilograms; 5 kilograms; 7.5 kilograms; or 10 kilograms.

17. The weights system according to any one of claims 1 to 16, wherein the multiple weights can be used to create the overall desirable weight.

18. The weights system according to any one of claims 1 to 17, wherein the location of the installation of the weights changes the nature and difficulty of the exercise to be performed.

19. The weights system according to any one of claims 1 to 18, wherein the body may be installed at one or more location on the bar.

20. The weights system of claim 19, wherein the lock and release mechanism enables the weight system to be installed at a range of locations on the bar.

21. The weights system according to any one of claims 1 to 20, wherein the more than one body is installed at more than one location.

22. The weights system according to any one of claims 1 to 20, wherein the up to two weights can each be installed at one or two location.

23. The weights system according to any one of claims 1 to 22, wherein pairs of weights can be used to adjust the weight at one of two locations on the bar.

24. The weights system according to any one of claims 2 to 9, wherein the blade apparatus is adapted to have two locations, each for installation of weights and each location can take, two, one or no weights.

25. The weights system according to any one of claims 1 to 24, wherein the exercise is to use as a blade or sword to perform a sequence of movements.

26. The weights system according to any one of claims 1 to 25, wherein the lock mechanism includes pushing the bar into a suitable slot on the body whereby the body is maintained on the bar.

27. The weights system of claim 26, wherein a moving part is included in the lock and release mechanism and the moving part moves between a locked position and a released position.

28. The weights system of claim 27, wherein a bias spring is included to assist in the moving of the moving part.

29. The weights system of claim 27 or 28, wherein the moving part is held in a locked position once the bar has been pushed into the mechanism and held by a catch.

30. The weights system of claim 29, wherein the catch includes a projection that catches in a receiving part.

31. The weights system according to any one of claims 1 to 30, wherein a single action of passing the bar into the body of the weight system and locking mechanism locks the weight onto the bar.

32. The weights system according to any one of claims 1 to 31, wherein release is achieved by pressing a button connected to the lock release mechanism.

33. The weights system of claim 32, wherein the button releases a catch so that a moving part can move freely and release the weight from the bar with a positive push on the button is required to release the catch.

34. The weights system according to any one of claims 1 to 33, wherein the body includes a slot and the bar passes within the slot to be in contact with the lock mechanism and thereby locked to the bar.

35. The weights system according to any one of claims 1 to 34, wherein the retaining on the bar is such that the weight are held firmly in place in the locked state so that they do not move while being used to perform a sequence of movements.

36. The weights system according to any one of claims 1 to 35, wherein the sequence of exercises are to emulate the use of a sword and move smoothly through a sequence of these exercise.

37. A blade apparatus for use with a weight system, the blade apparatus including:

an elongate part;

a handle part, associated with the elongate part such that when a person holds and moves the handle part the elongate part, correspondingly moves;

one or more weight that can be added to increase the weight of the fitness article, wherein, the blade apparatus can be used for moving through a sequence of movements, similar to those of using a bladed weapon, and the weights adjusted to increase or decrease the difficulty of performing the exercise.

38. The blade apparatus of claim 37 when used with the weight system of any one of claims 1 to 36.

39. A weight system and blade apparatus including:

an elongate part;

a handle part, associated with the elongate part such that when a person holds and moves the handle part the elongate part, correspondingly moves;

one or more weight that can be added to increase the weight of the fitness article, including a body, a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise, a lock and release mechanism, contained within or

otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar,

wherein the lock and release mechanism enables quick and easy exchanging, removal or addition of weight to the blade apparatus for use in a sequence of exercises emulating the use of bladed weapon.

40. A method of use of a weight system, the weights system including a body, a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise, a lock and release mechanism, contained within or otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar, the method including the following steps:

a) choosing a weight to put on the bar;

b) aligning a slot of the weight with the bar;

c) sliding the slot of the weight on to the bar so as to engage the lock release mechanism;

d) locking the weight to the bar, the weight being maintained thereon until the release mechanism is used.

41. The method of claim 40, wherein the bar is a blade apparatus.

42. The method of claim 40 or 41, wherein the release is actioned by pressing a button.

43. The method according to any one of claims 40 to 42, wherein the blade apparatus with attached weight system is used to perform a sequence of exercises.

44. A method of use of a blade apparatus, the blade apparatus including an elongate part and a handle part, associated with the elongate part, the method including the followings steps:

a) Preparing the blade apparatus for use by adding one or more weight;

b) Conducting warm-up exercises

c) Moving the prepared fitness article through a sequence of moves to simulate use of a sword or dagger;

d) Repeating the sequences of moves a predetermined number of times;

e) Moving through other sequences as required for the class;

f) Conducting a warm-down.

45. The method of claim 44, wherein the blade apparatus is the blade apparatus of claim 37 or 38.

AMENDED CLAIMS
received by the International Bureau on 26 May 2018 (26.05.2018)

THE CLAIMS:

1. A weights system, for use with a bar of a blade apparatus, the weights system including:

a body;

a weight means contained within or otherwise associated with the body, to give the weight system a useful weight for performing exercise;

a lock and release mechanism, contained within or otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar,

wherein the lock and release mechanism enables quick and easy exchanging, removal or addition of weight to the bar for use in a sequence of exercises, and further wherein the blade apparatus is adapted to have multiple locations, each for installation of weights and each location can take, two, one or no weights, and be used through a sequence of movements to emulate a bladed instrument.

2. The weights system according to claim 1, wherein the blade apparatus has a shaft or post with a circular cross-section and the weights system readily connects onto the rounded bar through use of the lock and release mechanism.

3. The weights system according to any one of claims 1 or 2, wherein the shape of the body is substantially cuboid with cut-outs for a handle, to slot on to the bar.

4. The weights system according to any one of claims 1 to 3, wherein the body includes the weight means integrally from the weight of the material of the body.

5. The weights system according to any one of claims 1 to 4, wherein weights are included in the body to provide the useful weight chosen from the group: 500 grams; 1 kilogram; 2 kilograms; 5 kilograms; 7.5 kilograms; or 10 kilograms.

6. The weights system according to claim 5, wherein multiple weights can be used to create the overall desirable weight.

7. The weights system according to any one of claims 1 to 6, wherein the location of the installation of the weights changes the nature and difficulty of the exercise to be performed.

8. The weights system according to any one of claims 1 to 7, wherein the more than one body is installed at more than one location.

9. The weights system according to any one of claims 1 to 8, wherein the up to two weights can each be installed at one or two location.

10. The weights system according to any one of claims 1 to 9, wherein pairs of weights can be used to adjust the weight at one of two locations on the bar.

11. The weights system according to any one of claims 1 to 10, wherein the blade apparatus is adapted to have two locations, each for installation of weights and each location can take, two, one or no weights.

12. The weights system according to any one of claims 1 to 11, wherein the lock mechanism includes pushing the bar into a suitable slot on the body whereby the body is maintained on the bar.

13. The weights system of claim 12, wherein a moving part is included in the lock and release mechanism and the moving part moves between a locked position and a released position and a bias spring is included to assist in the moving of the moving part.

14. The weights system of claim 13, wherein the moving part is held in a locked position once the bar has been pushed into the mechanism and held by a catch.

15. The weights system of claim 14, wherein the catch includes a projection that catches in a receiving part.

16. The weights system according to any one of claims 1 to 15, wherein a single action of passing the bar into the body of the weight system and locking mechanism locks the weight onto the bar.

17. The weights system according to any one of claims 1 to 16, wherein release is achieved by pressing a button connected to the lock release mechanism.

18. The weights system of claim 17, wherein the button releases a catch so that a moving part can move freely and release the weight from the bar with a positive push on the button is required to release the catch.

19. A method of use of a weight system according claim 1, the method including the following steps:

a) choosing a weight to put on the bar;

b) aligning a slot of the weight with the bar;

c) sliding the slot of the weight on to the bar so as to engage the lock release mechanism;

d) locking the weight to the bar, the weight being maintained thereon until the release mechanism is used.

20. The method of claim 19, wherein the blade apparatus is the blade apparatus of any one of claims 1 to 18.

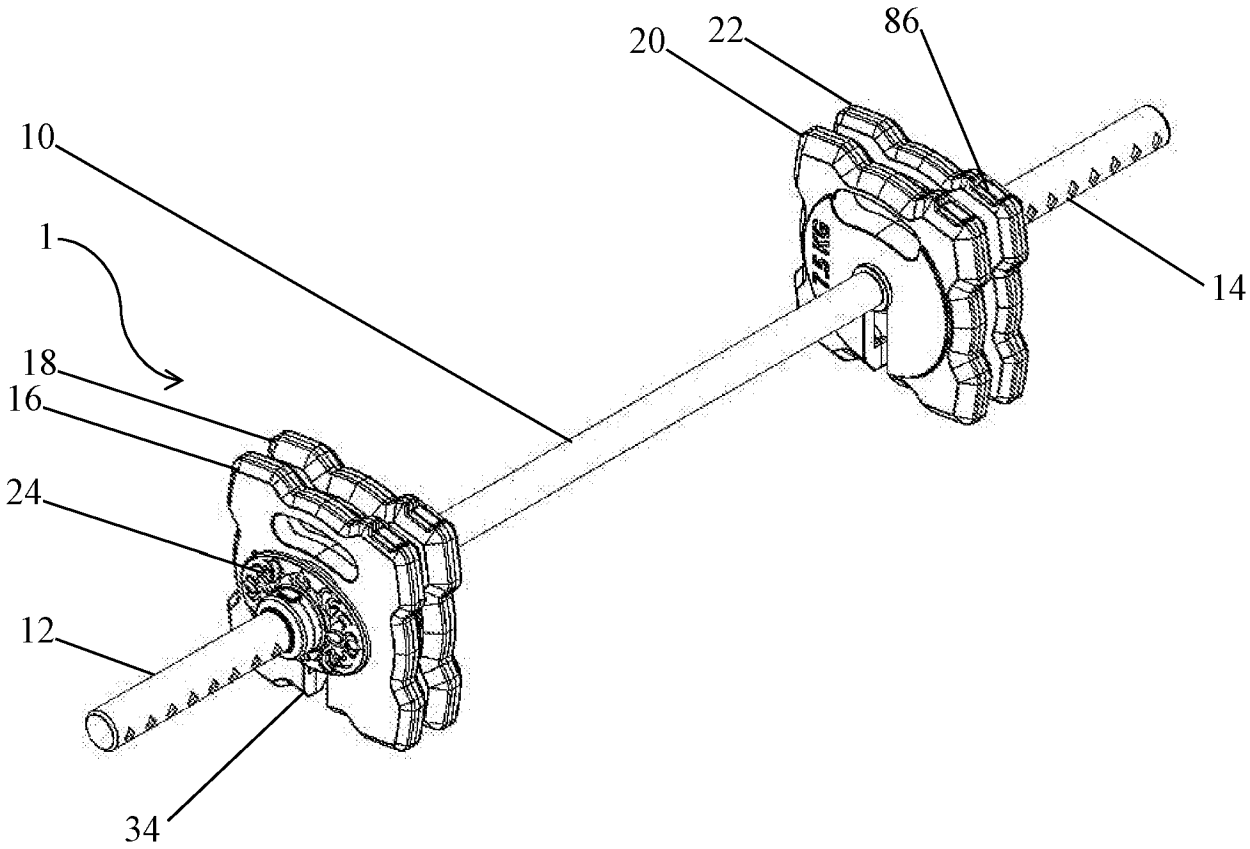

FIGURE 1

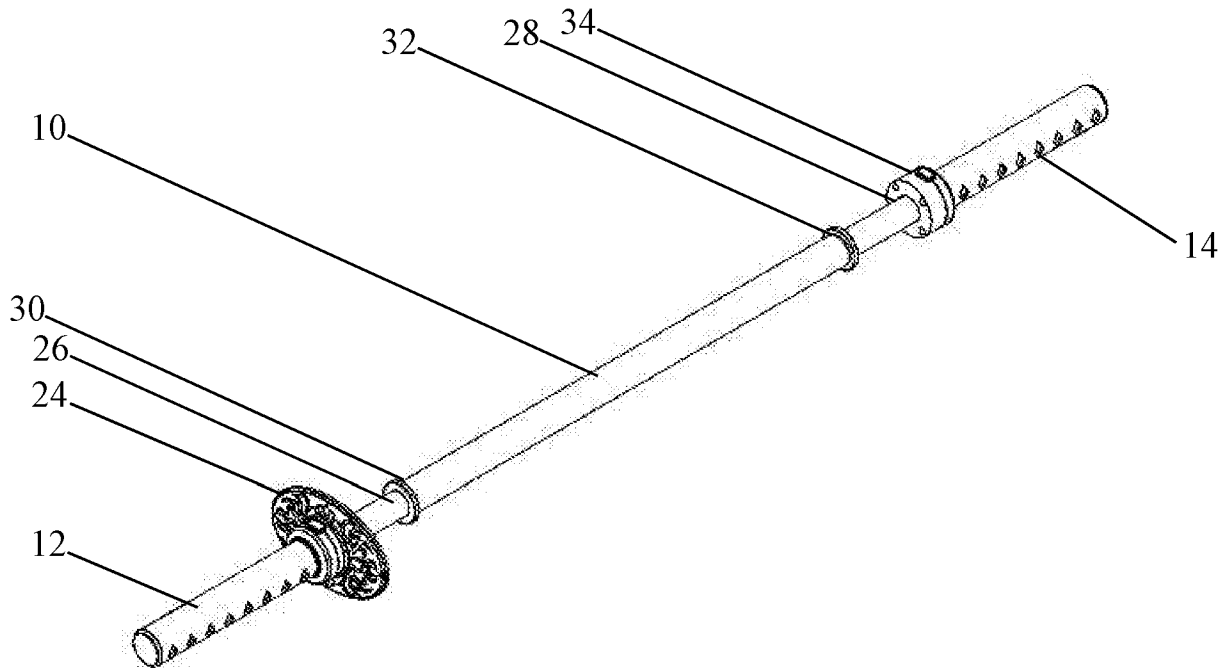

FIGURE 2

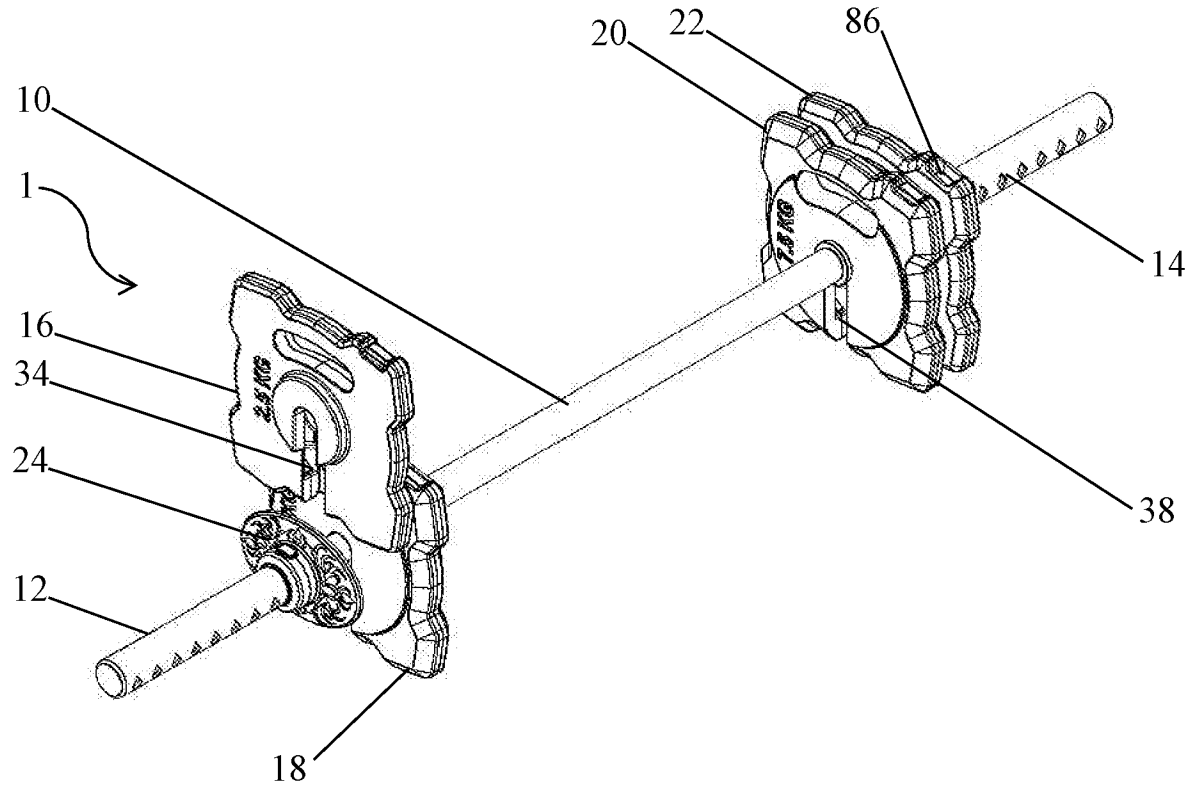

FIGURE 3

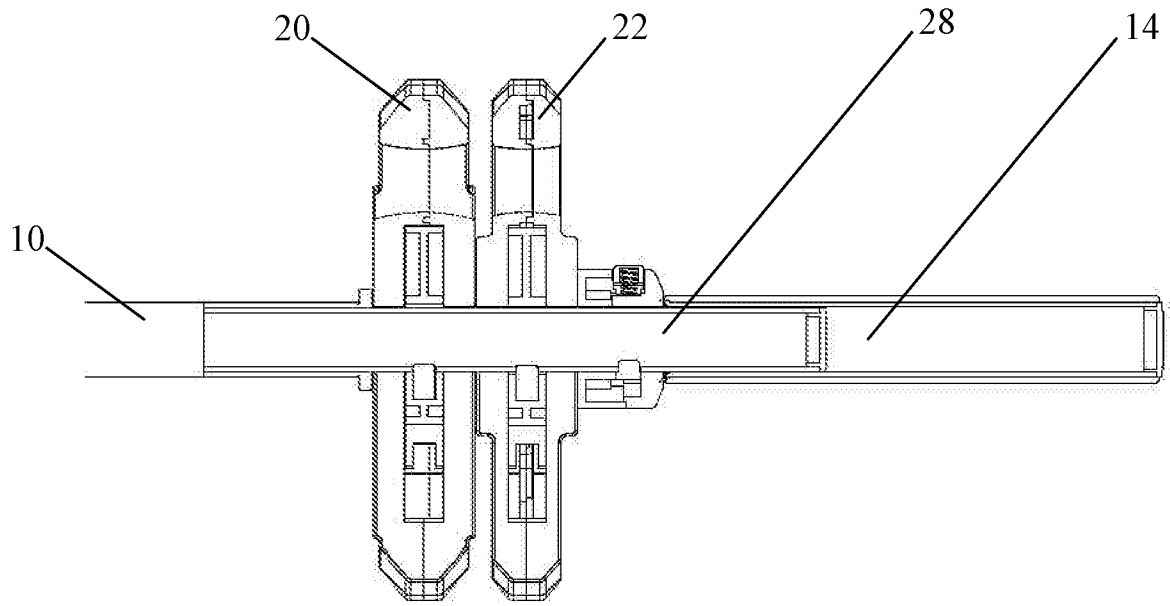

FIGURE 4

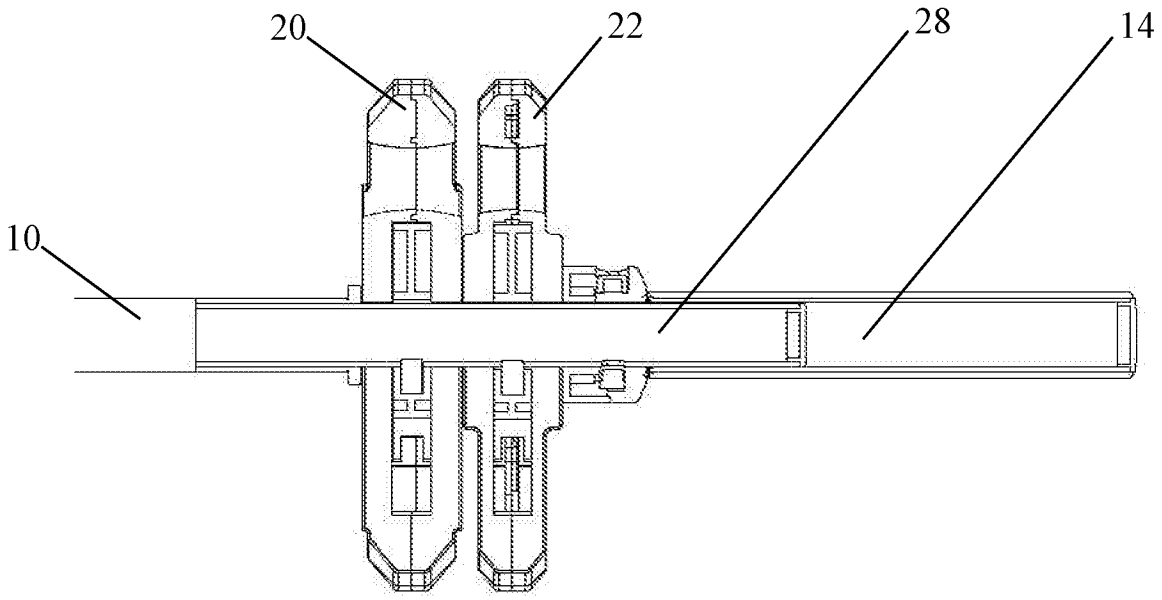

FIGURE 5

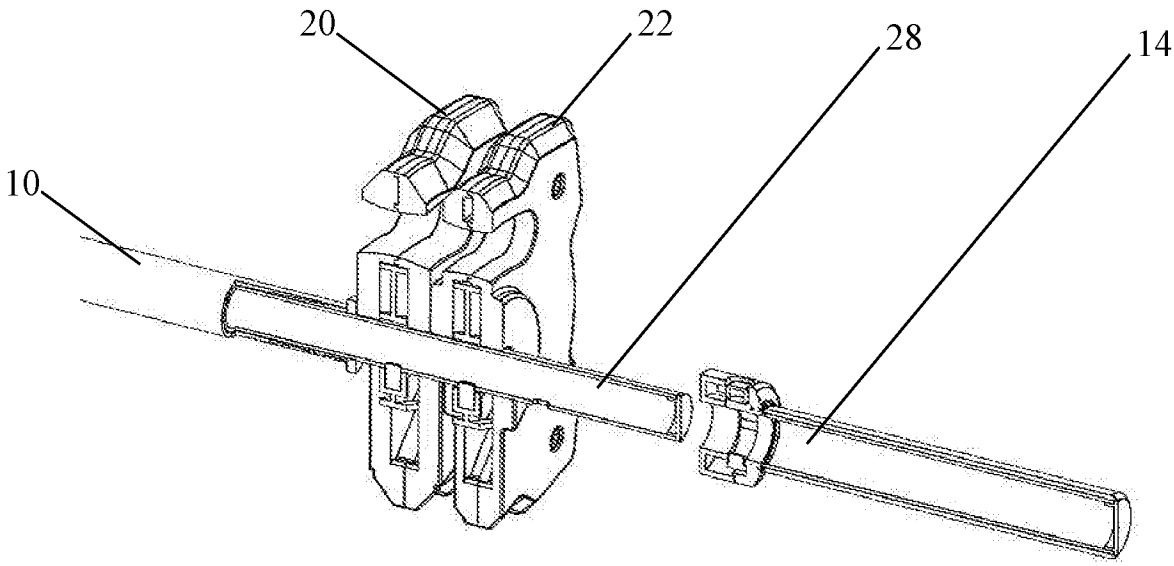

FIGURE 6

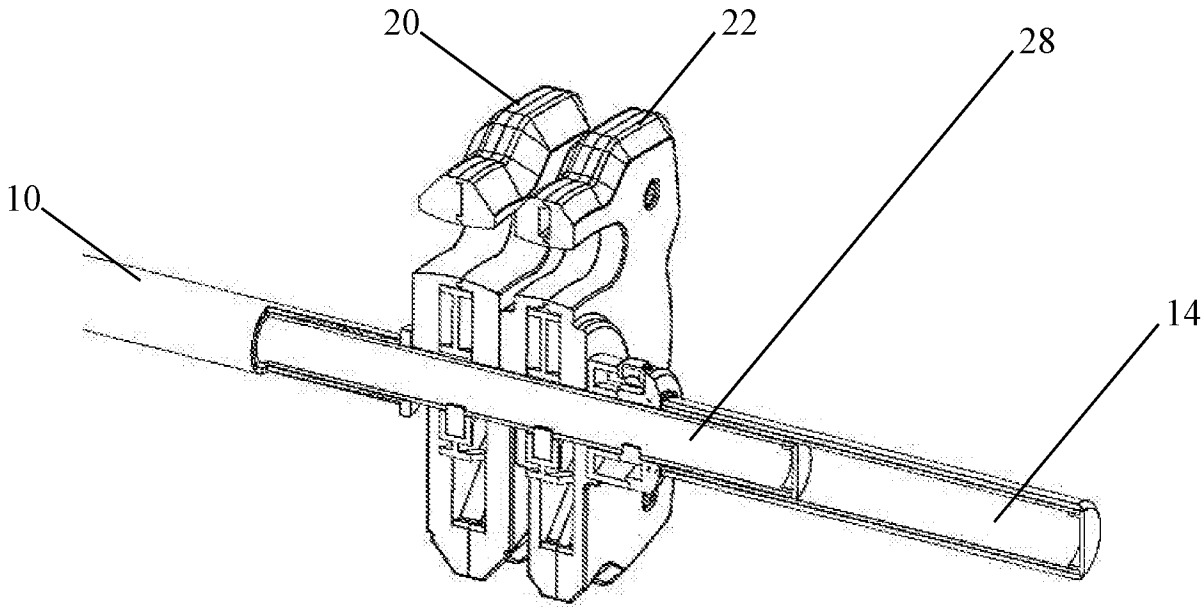

FIGURE 7

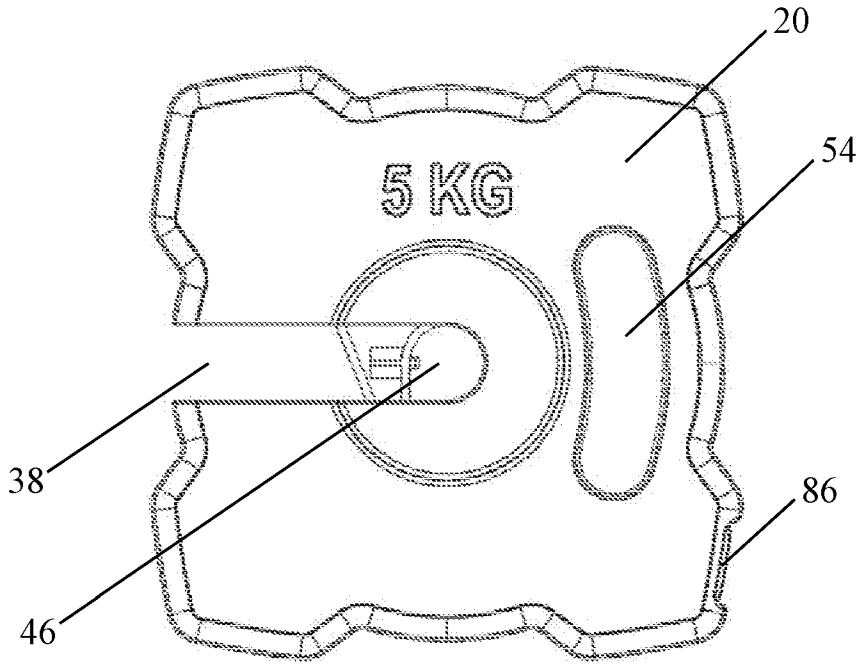

FIGURE 8

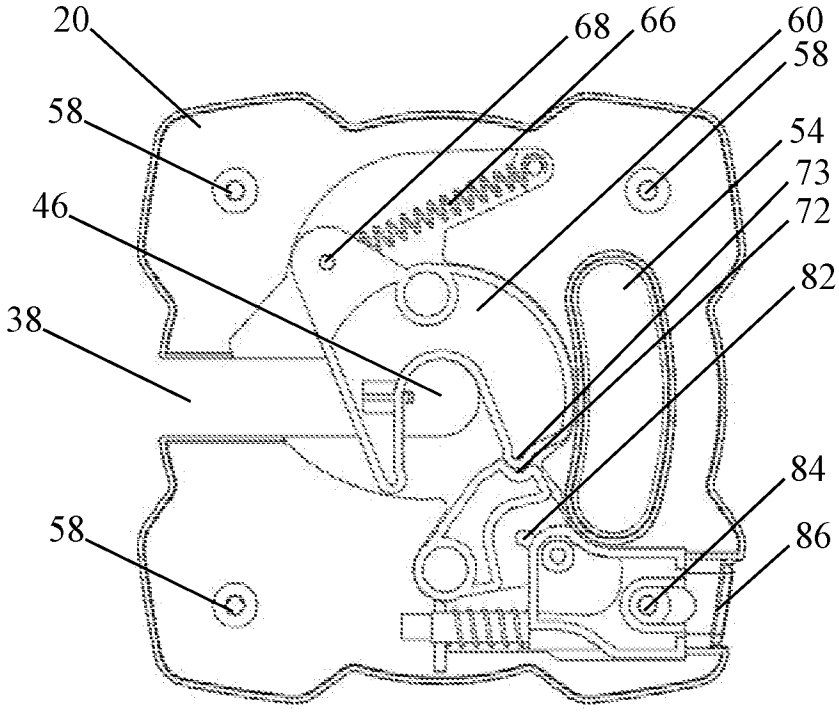

FIGURE 9

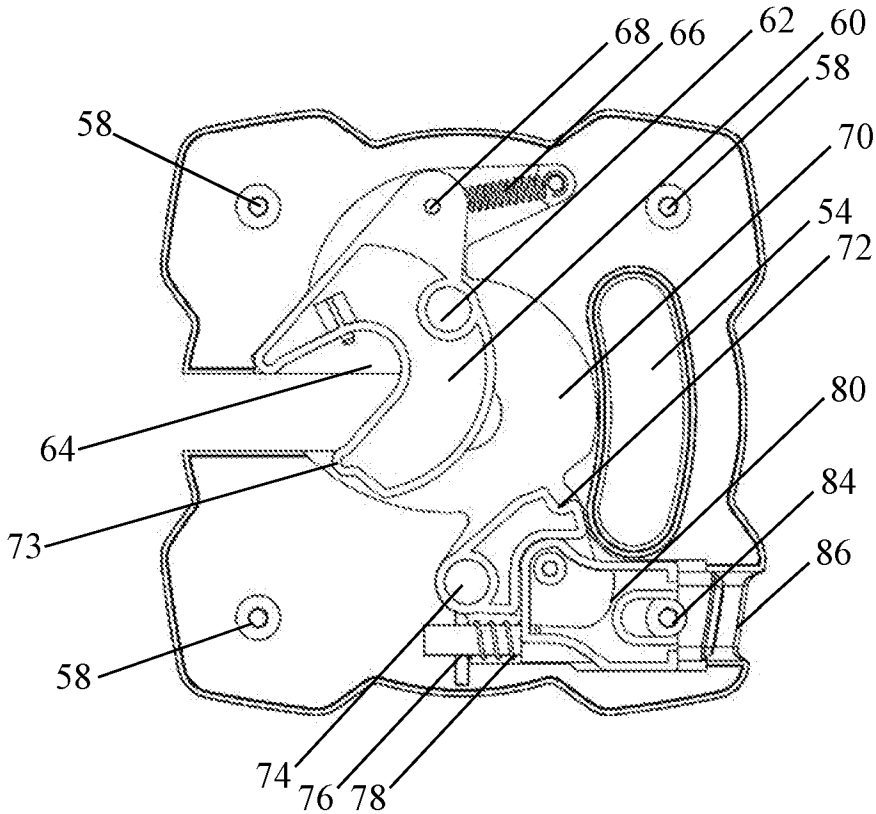

FIGURE 10

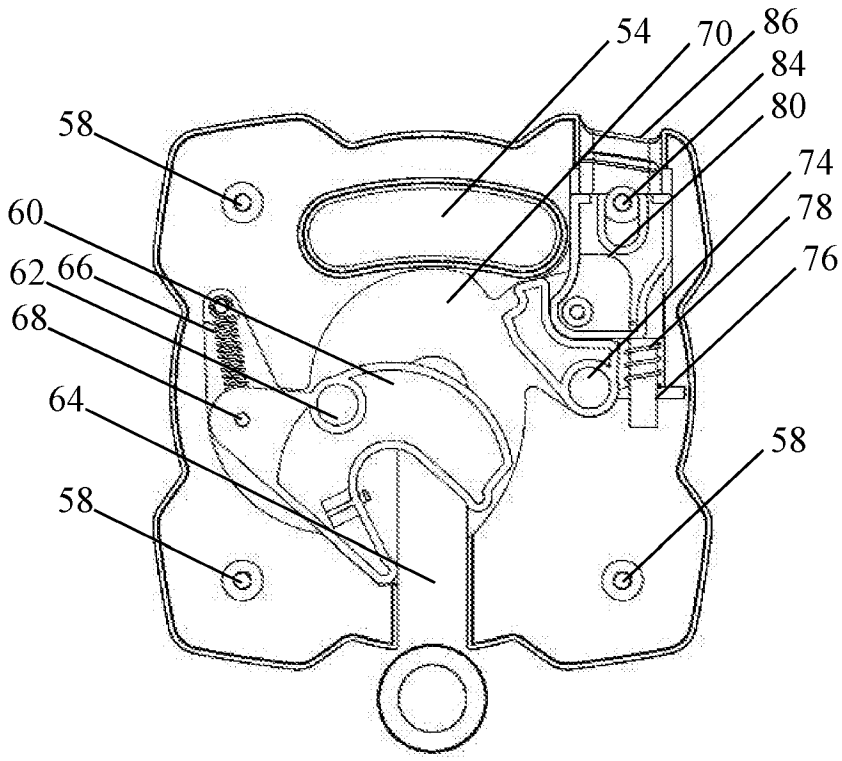

FIGURE 11

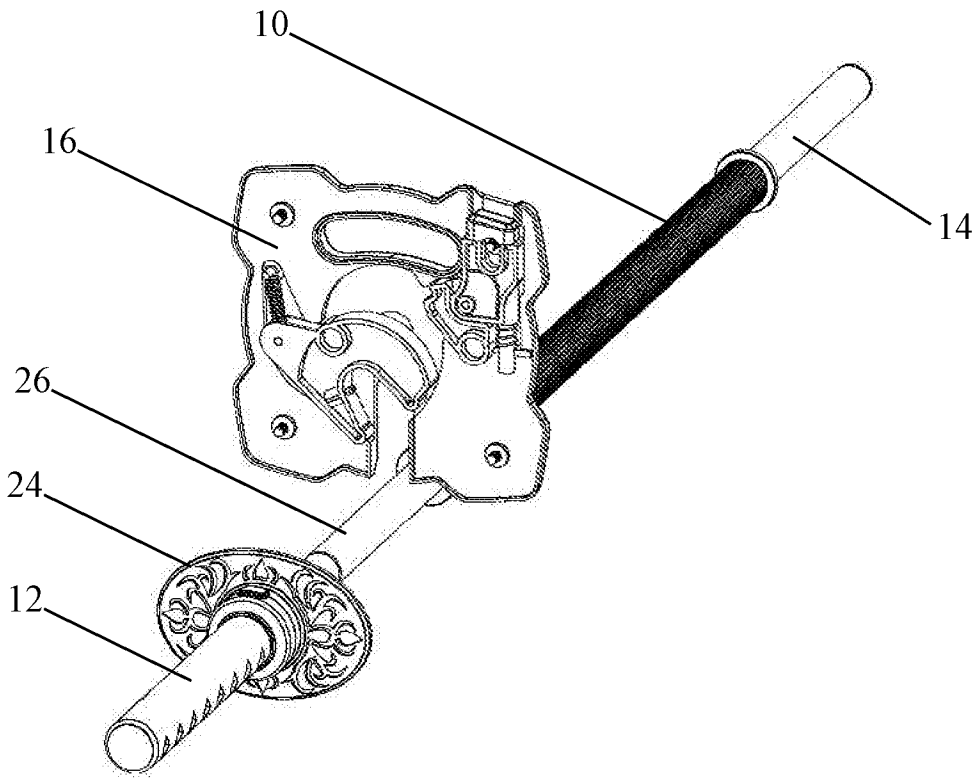

FIGURE 12

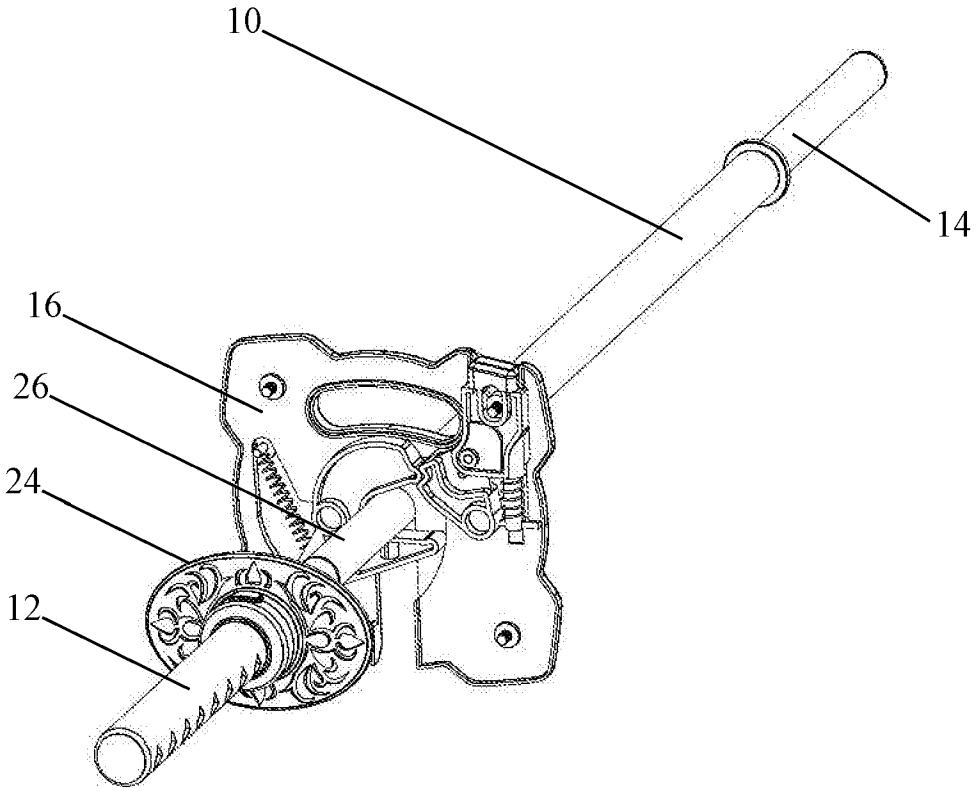

FIGURE 13

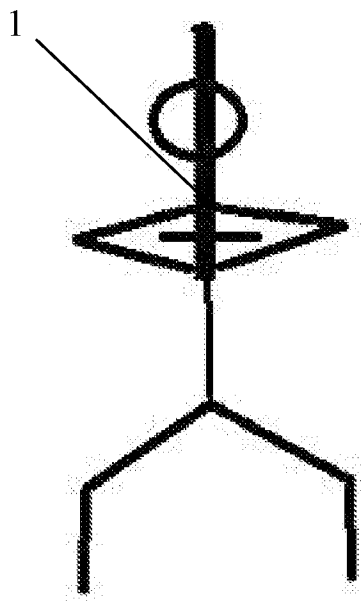

FIGURE 14a

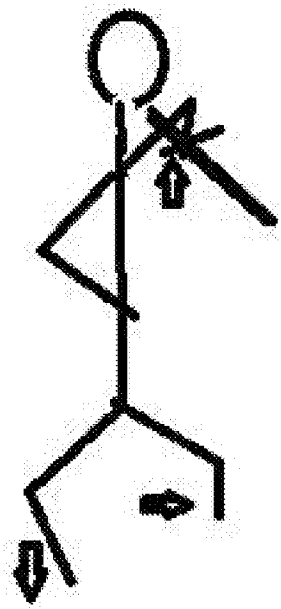

FIGURE 14b

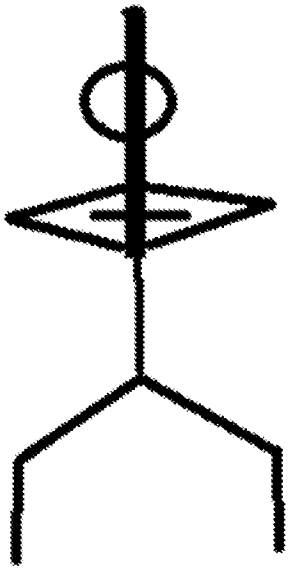

FIGURE 15a

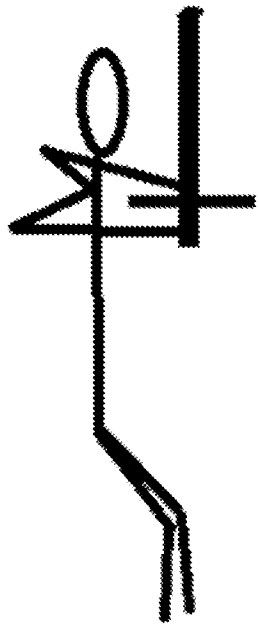

FIGURE 15b

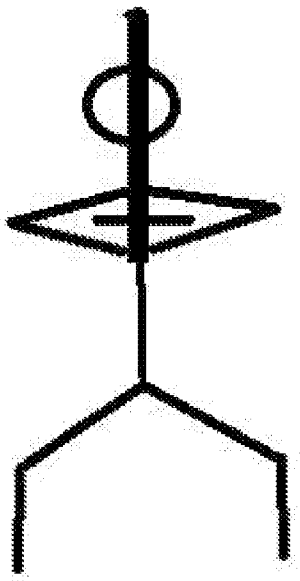

FIGURE 16a

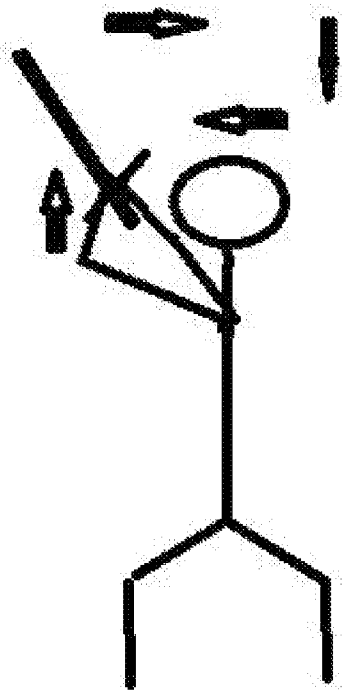

FIGURE 16b

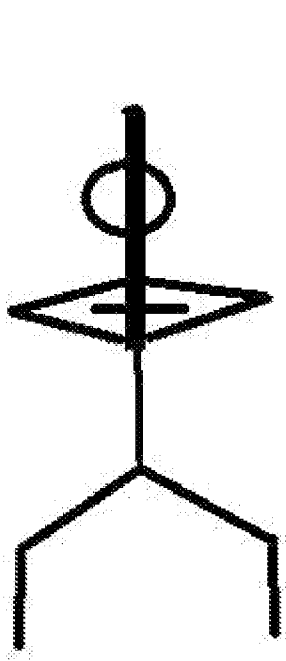

FIGURE 17a

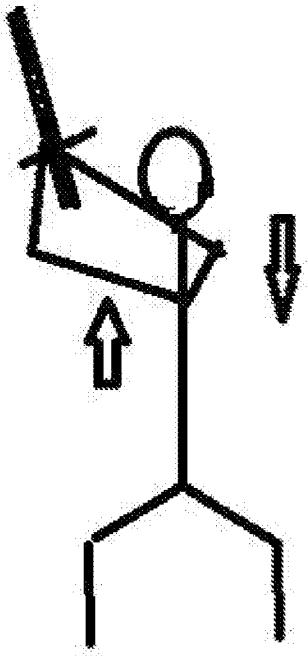

FIGURE 17b

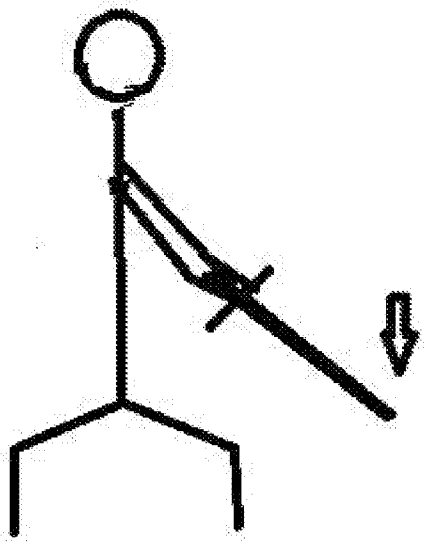

FIGURE 17c

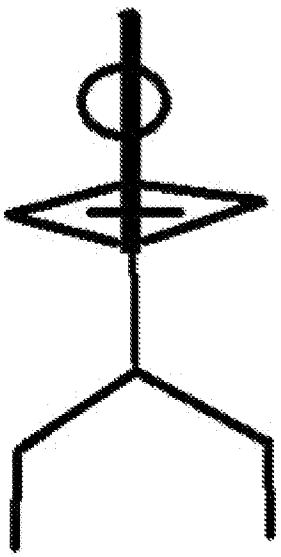

FIGURE 18a

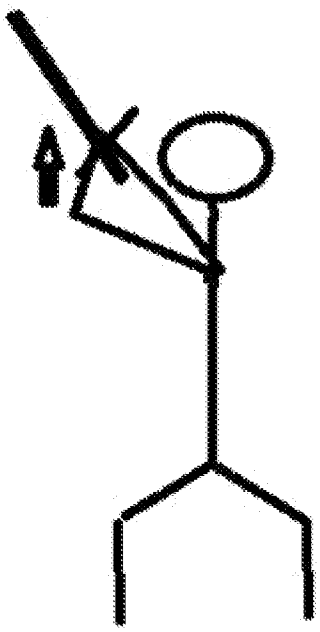

FIGURE 18b

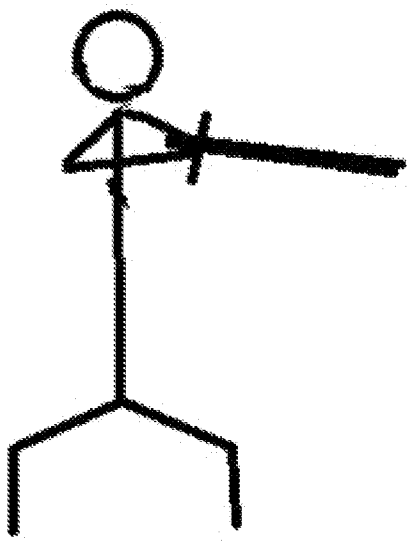

FIGURE 18c

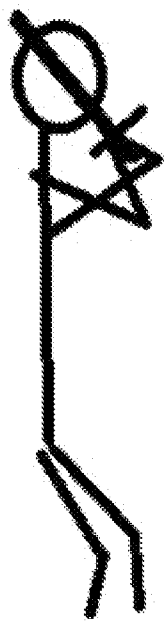

FIGURE 19a

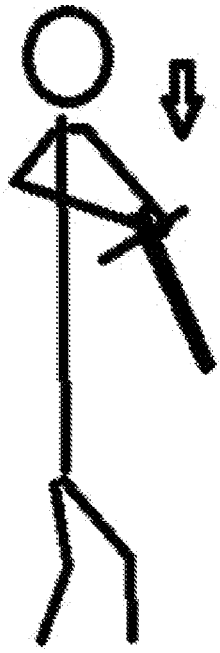

FIGURE 19b

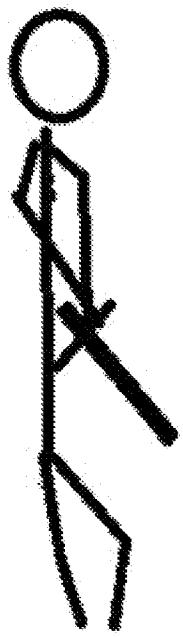

FIGURE 19c

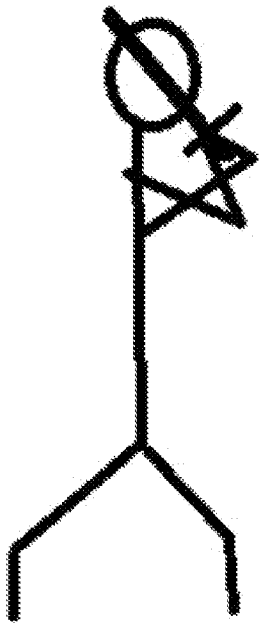

FIGURE 20

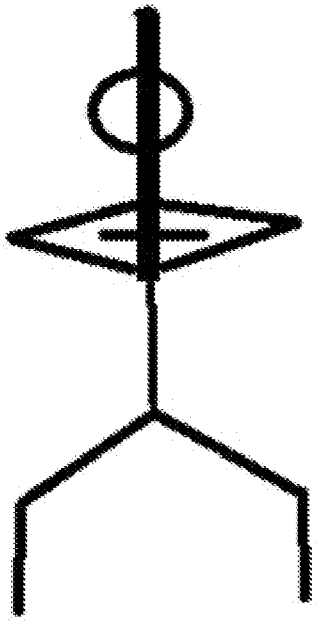

FIGURE 21a

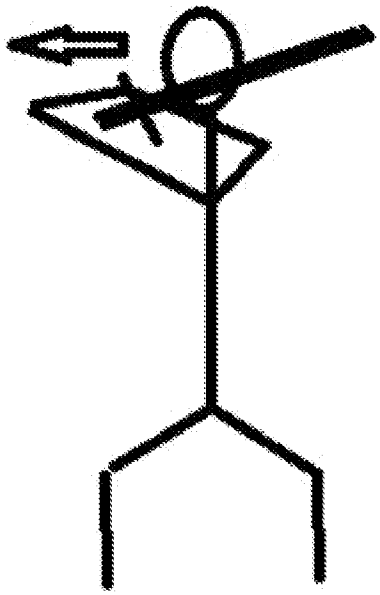

FIGURE 21b

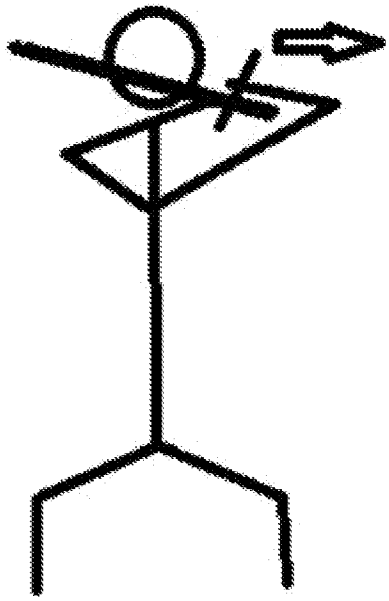

FIGURE 21c

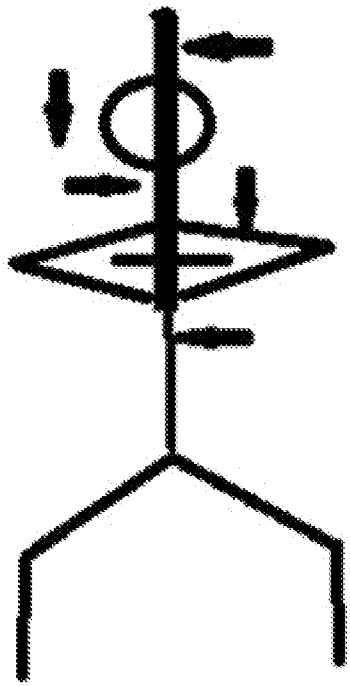

FIGURE 22

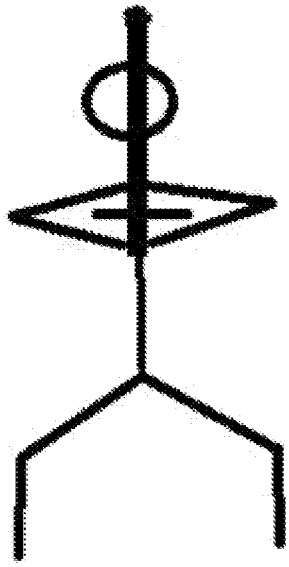

FIGURE 23a

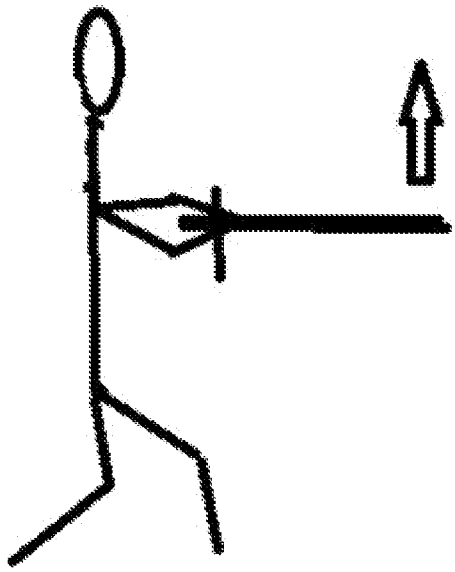

FIGURE 23b

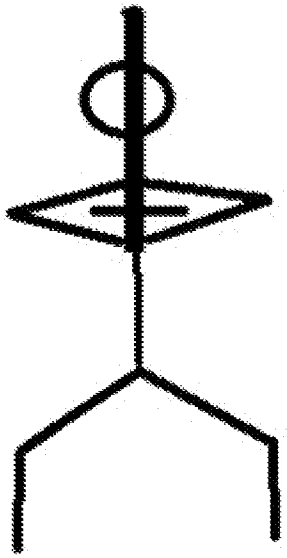

FIGURE 24a

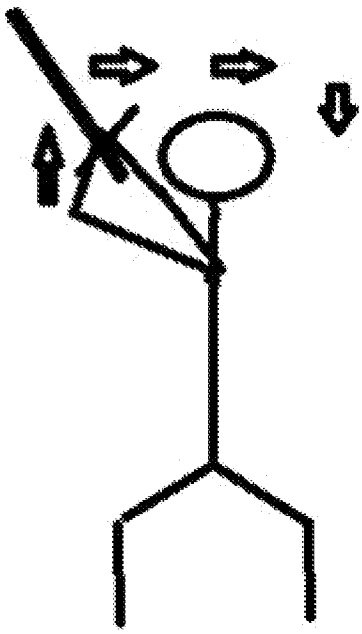

FIGURE 24b

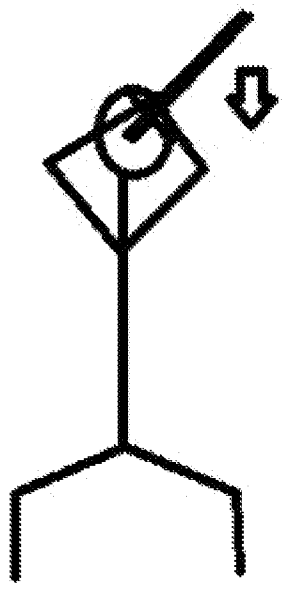

FIGURE 24c

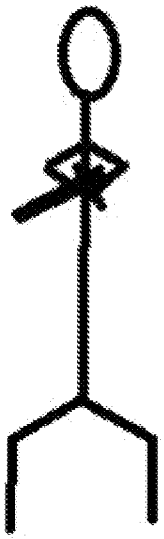

FIGURE 24d

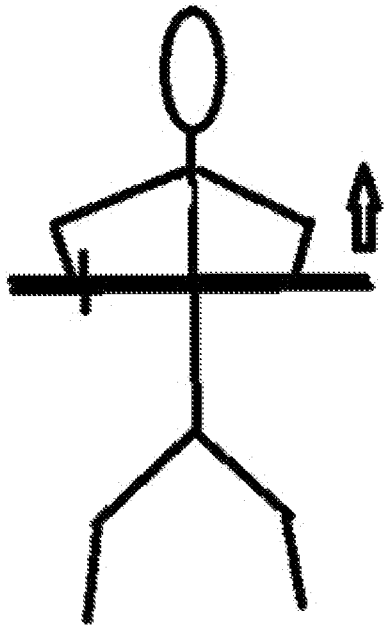

FIGURE 25a

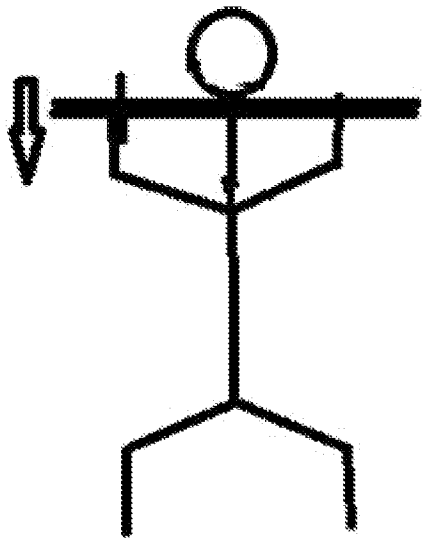

FIGURE 25b

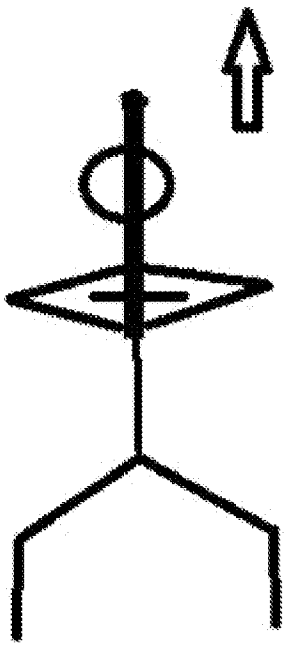

FIGURE 26a

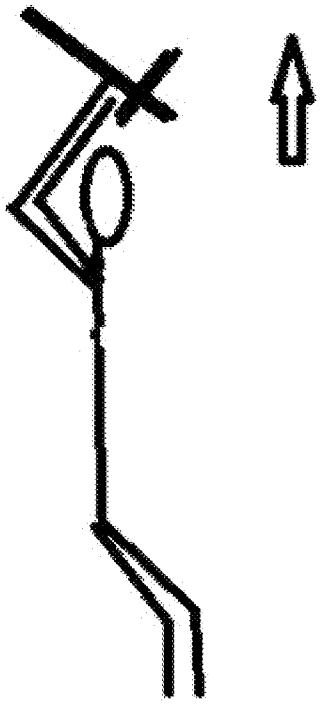

FIGURE 26b

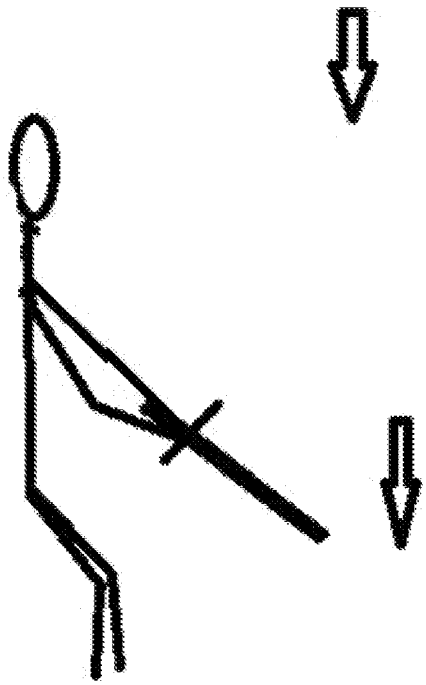

FIGURE 26c

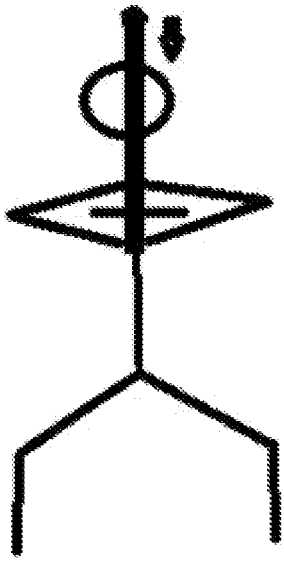

FIGURE 27a

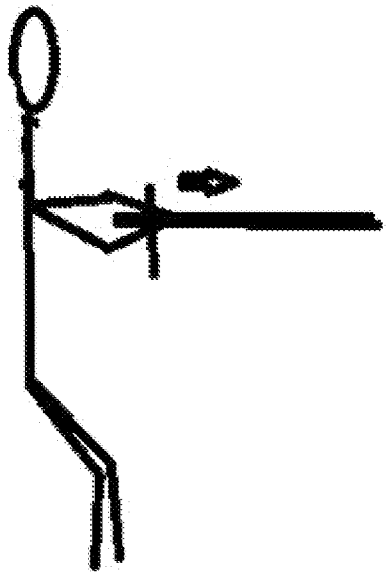

FIGURE 27b

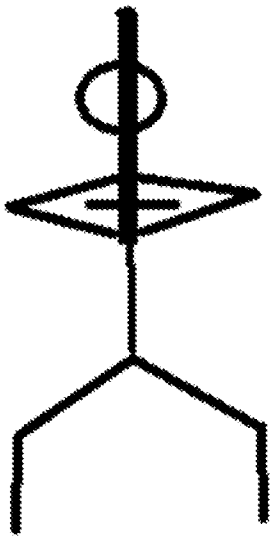

FIGURE 28a

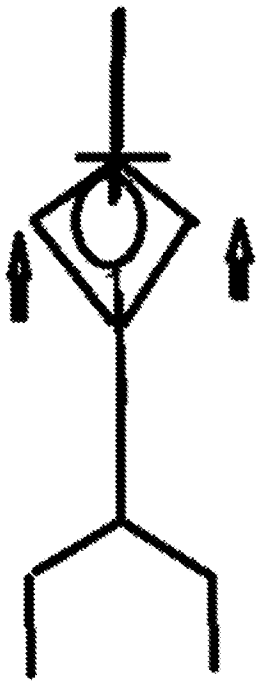

FIGURE 28b

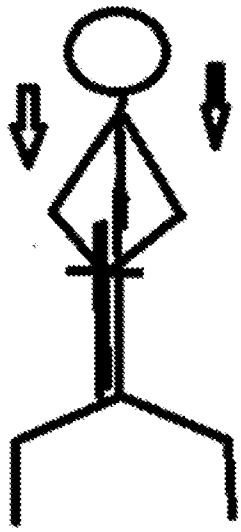

FIGURE 28c

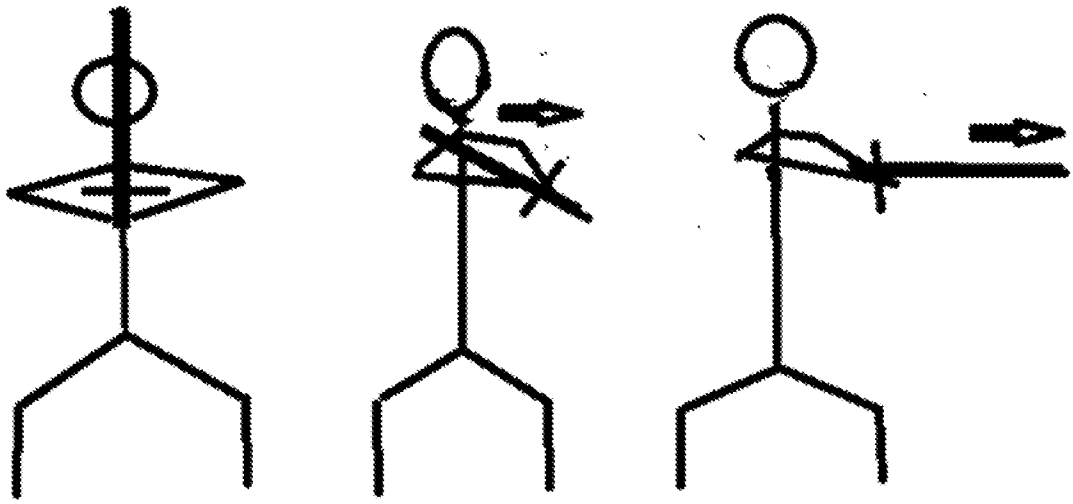

FIGURE 29a FIGURE 29b FIGURE 29c

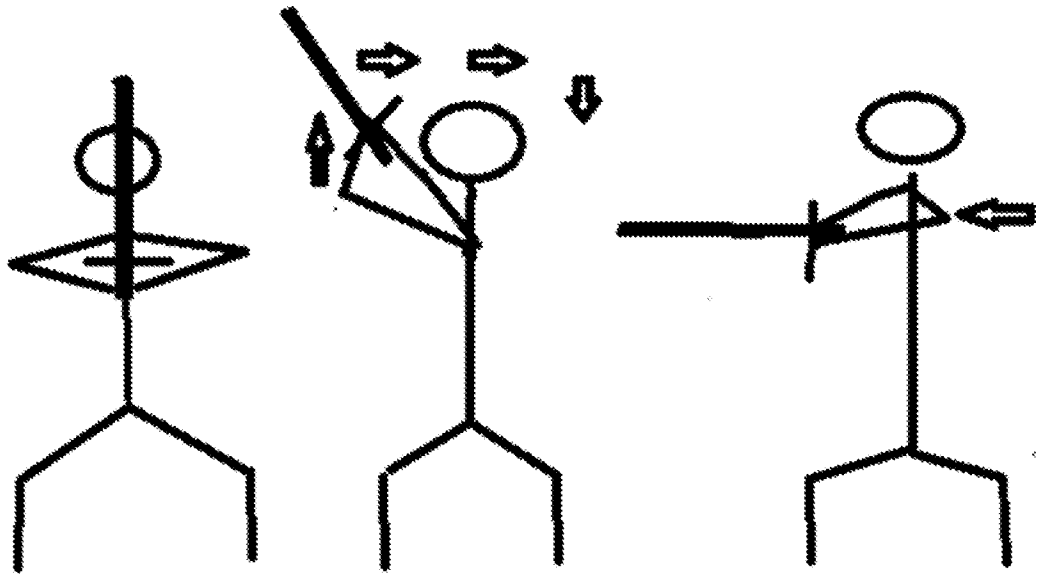

FIGURE 30a FIGURE 30b FIGURE 30c

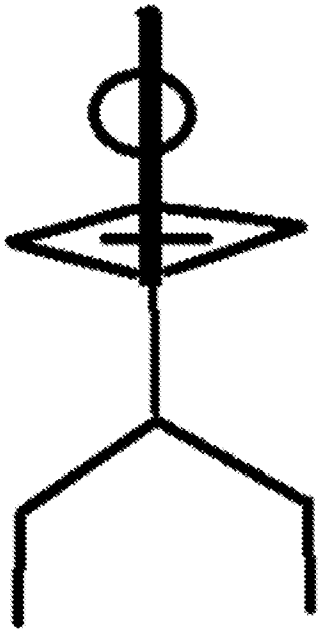

FIGURE 31a

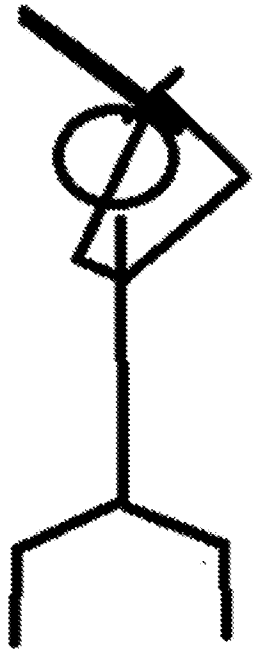

FIGURE 31b

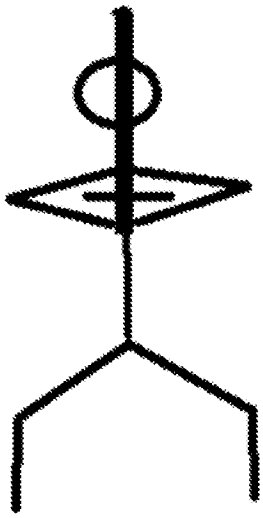

FIGURE 32a

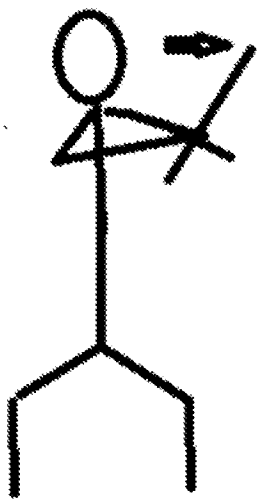

FIGURE 32b

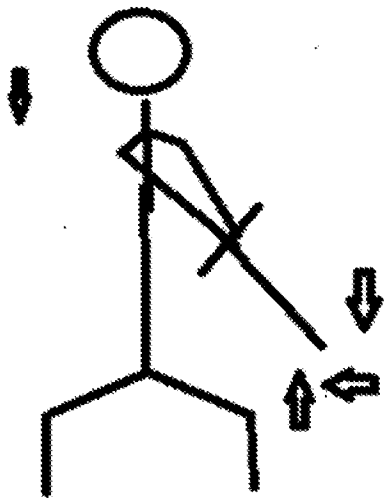

FIGURE 32c

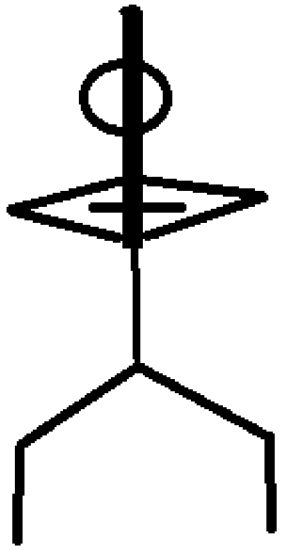

FIGURE 33a

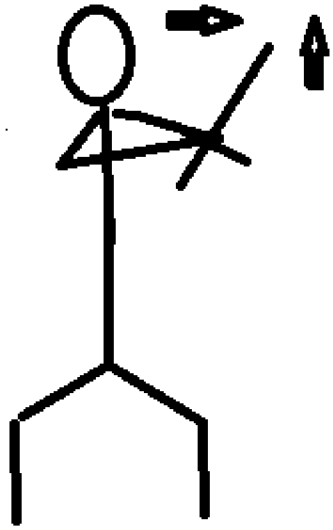

FIGURE 33b

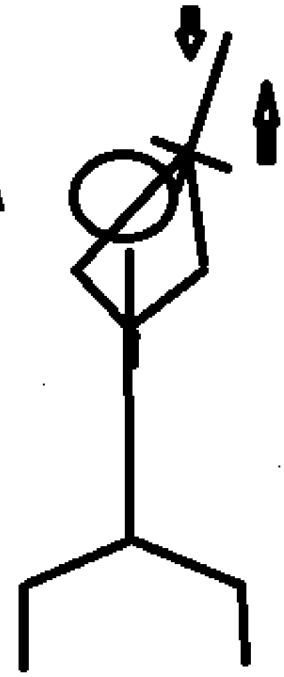

FIGURE 33c

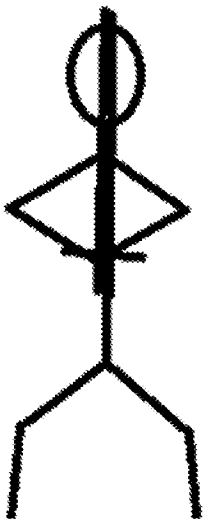

FIGURE 34a

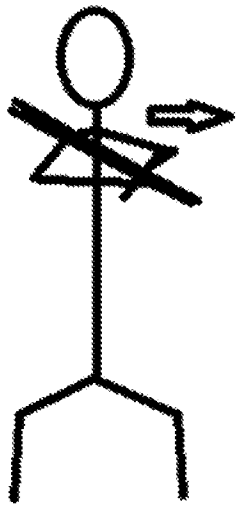

FIGURE 34b

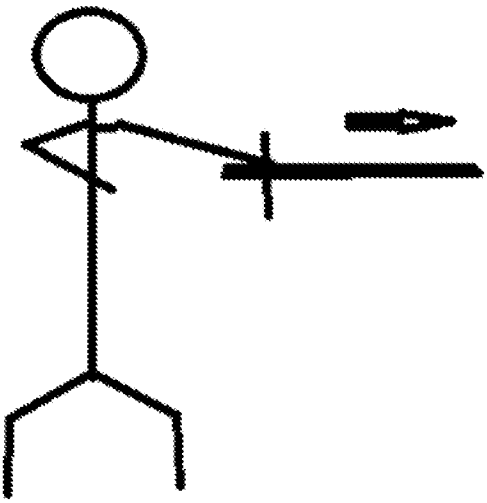

FIGURE 34c

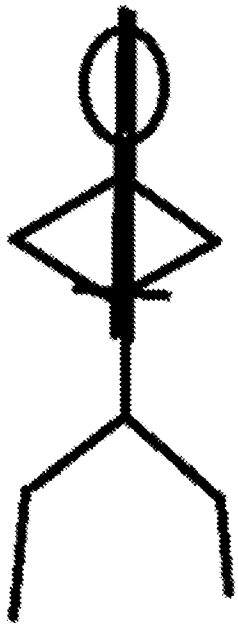

FIGURE 35a

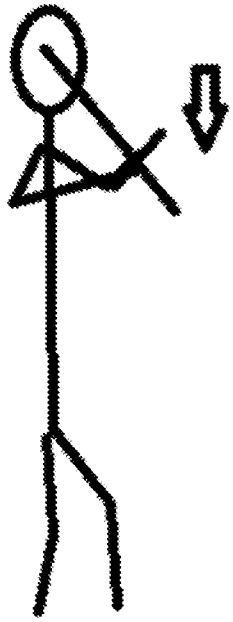

FIGURE 35b

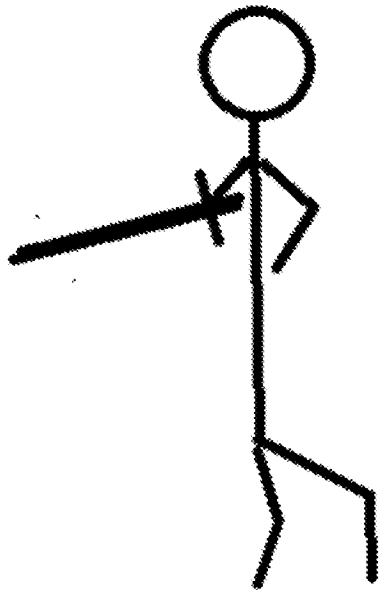

FIGURE 35c

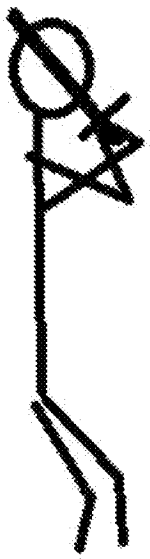

FIGURE 36a

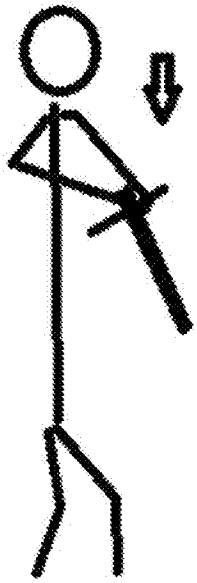

FIGURE 36b

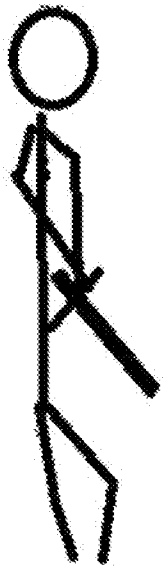

FIGURE 36c

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2017/051465

A. CLASSIFICATION OF SUBJECT MATTER

A63B 21/06 (2006.01) A63B 15/00 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PATENW, WPIAP, EPODOC, IPC/CPC: A63B21/00, A63B15/00, Keywords (exercise, fitness, pole, bar, blade, sword, add, detach, load, weight, lock, release, latch, button) and like terms, Google, Google Patents, Google Scholar & The Lens, Keywords (exercise, fitness, workout, pole, bar, rod, blade, sword, elongate, add, detach, transfer, load, weight, lock, release, catch) and like terms, Google, Espacenet: Applicant/Inventor name search.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

[X] Further documents are listed in the continuation of Box C [X] See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 March 2018	26 March 2018
Name and mailing address of the ISA/AU	**Authorised officer**
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA Email address: pct@ipaustralia.gov.au	Chirag Mehta AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No. +61262832807

INTERNATIONAL SEARCH REPORT C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		International application No. **PCT/AU2017/051465**
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5628713 A (WILKINSON) 13 May 1997 (Abstract, Column 1, Lines 30-55, Column 3, Lines 34-57, Column 4, Lines 17-67, Column 5, Lines 13-26, Column 7, Line 58-Column 9, Line 6, Figures 1 & 8)	1-45
X	WO 2009/082823 A1 (DYNAMIC INERTIA FITNESS INC.) 09 July 2009 (Abstract, Page 2, Line 19-Page 3, Line 25; Page 7, Line 4-Page 8, Line 18; Page 12, Lines 1-12; Page 16, Line 4-Page 17, Line 7; Page 20, Line 24-Page 21, Line 22 & Page 27, Line 6-Page 28, Line 8, Figures 3-4, 6-7)	1-45
X	WO 2016/054684 A1 (DALE, NATALIE JANE) 14 April 2016 (Abstract, Paras 0008-0013, 0015-0018, 0022-0027, 0031, 0040-0047 & 0051)	1-45

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2017/051465

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

the subject matter listed in Rule 39 on which, under Article 17(2)(a)(i), an international search is not required to be carried out, including

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Supplemental Box for Details

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Supplemental Box

Continuation of: **Box III**

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

This Authority has found that there are different inventions based on the following features that separate the claims into distinct groups:

Claims 1-36, 39-43 are directed to a weight system and a blade apparatus. The features of a body; a weight means contained within or otherwise associated with the body; a lock and release mechanism, contained within or otherwise associated with the body, the lock and release mechanism movable between a locked state, whereby the body and weight means are retained on the bar, and a released state which is operable to release the body and weight means from the bar are specific to this group of claims.

Claims 37-38, 44-45 are directed to a blade apparatus. The feature of an elongate part; a handle part associated with the elongate part; one or more weight that can be added to increase the weight of the fitness article wherein the blade apparatus can be used for moving through a sequence of movements similar to those of using a bladed weapon and the weights adjusted to increase or decrease the difficulty of performing the exercise are specific to this group of claims.

PCT Rule 13.2, first sentence, states that unity of invention is only fulfilled when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. PCT Rule 13.2, second sentence, defines a special technical feature as a feature which makes a contribution over the prior art.

When there is no special technical feature common to all the claimed inventions there is no unity of invention.

In the above groups of claims, the identified features may have the potential to make a contribution over the prior art but are not common to all the claimed inventions and therefore cannot provide the required technical relationship. Therefore there is no special technical feature common to all the claimed inventions and the requirements for unity of invention are consequently not satisfied a *priori*.

INTERNATIONAL SEARCH REPORT Information on patent family members	International application No. **PCT/AU2017/051465**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	**Publication Date**	**Publication Number**	**Publication Date**
US 5628713 A	13 May 1997	US 5628713 A	13 May 1997
		US 5443435 A	22 Aug 1995
		US 5490825 A	13 Feb 1996
		US 5586957 A	24 Dec 1996
		US 5788608 A	04 Aug 1998
WO 2009/082823 A1	09 July 2009	WO 2009082823 A1	09 Jul 2009
		CA 2711150 A1	09 Jul 2009
		US 2010285907 A1	11 Nov 2010
		US 8491422 B2	23 Jul 2013
		US 2014031178 A1	30 Jan 2014
WO 2016/054684 A1	14 April 2016	WO 2016054684 A1	14 Apr 2016
		AU 2015330959 A1	25 May 2017
		AU 2015330959 A2	05 Oct 2017

End of Annex

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.