(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 884 267 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
06.02.2008 Bulletin 2008/06

(51) Int Cl.:
A63B 69/20 *(2006.01)*

(21) Application number: **07253038.9**

(22) Date of filing: **02.08.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **03.08.2006 GB 0615381**

(71) Applicant: **Smith, Victor John**
46, Hackford Road
Bilston, Wolverhampton
West Midlands, WV4 6BU (GB)

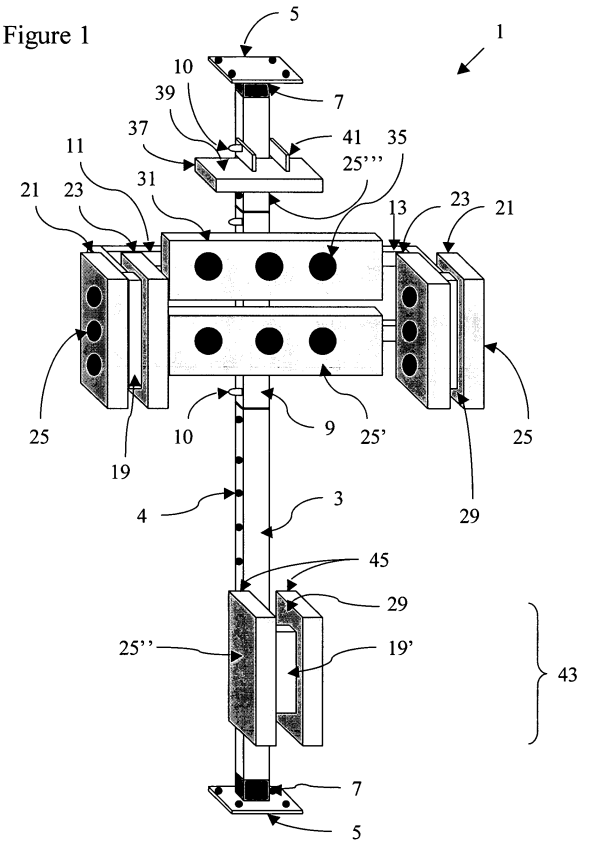
(72) Inventor: **Smith, Victor John**
46, Hackford Road
Bilston, Wolverhampton
West Midlands, WV4 6BU (GB)

(74) Representative: **Atkinson, Jennifer**
Barker Brettell
138 Hagley Road
Edgbaston
Birmingham B16 9PW (GB)

(54) Training apparatus

(57) This invention relates to training apparatus comprising a support member and at least a first and a second target pad mounted on the support member, wherein the first and second target pads are mounted on the support member such that a striking surface of the first target pad is inclined relative to a striking surface of the second target pad.

Figure 1



EP 1 884 267 A1

Description

[0001] The present invention relates to training apparatus for training a fighter.

[0002] Fighters such as boxers, martial artists, or kick-boxers often train to fight an opponent using a variety of methods. Fighters can train by training with a partner, fighting an opponent or using training apparatus. The training partner can hold pads at various heights and angles for the fighter to strike. Another training method is to use an apparatus such as a punch or kick bag, which allows a fighter to train or practice their striking skills, increase their fitness and to train/practice their manoeuvrability for fighting. Use of such apparatus reduces the need for a training partner or opponent who may not always be available to train with, or who is tired or injured during training. A fighter training on an inanimate apparatus can strike as fast and hard as possible without worrying about injuring a partner and can train for as long as they want.

[0003] Punch bags are often heavy and hard as they are usually filled with a variety of materials such as cloth which can compact over time. Extensive use of conventional punch bags can often result in injury to the hand or wrist of the user. A conventional punch bag also takes up a lot of space in a training gym as it is usually suspended on a chain or rope that allows it to swing after striking.

[0004] Another apparatus used for training a fighter is a standing dummy. Such dummies are shaped to recreate the head and torso of a person. These dummies are usually padded with foam to protect the hand of the fighter when training. The dummy is usually free standing with a heavily weighted base to prevent it from falling over. However, an average fighter is unable to train with such dummies because they are too easily moved or knocked over even after a single strike.

[0005] An example of another training device is a target pad or ball suspended on a rigid pole or spring, which projects from the ground or ceiling. Such devices provide no feedback to the user as they are easily moved and they only allow the training of a limited number of strikes such as a straight jab only.

[0006] According to a first aspect of the invention there is provided a training apparatus comprising a support member and at least a first and a second target pad mounted on the support member, wherein the first and second target pads are mounted on the support member such that a striking surface of the first target pad is inclined relative to a striking surface of the second target pad.

[0007] According to another aspect of the invention there is provided a training apparatus comprising a support member and at least a first and a second target pad, wherein the first and second target pads are adapted to be mounted on the support member such that a striking surface of the first target pad is inclined relative to a striking surface of the second target pad.

[0008] Preferably, when mounted on the support member, the striking surface of the first target pad is substantially perpendicular to the striking surface of the second target pad. The striking surface of the first target pad may be angled at from about 45° to about 135°, preferably at from about 80° to 100°, more preferably about 90°, relative to the striking surface of the second target pad.

[0009] The striking surface of the first or second target pad may be arranged in use to face a user.

[0010] The first and second targets pads, and indeed all target pads, may be configured as discrete elements. Alternatively, they may be part of a larger pad element.

[0011] Where reference is made herein to a target pad, it is intended to include a facing target pad, hook target pad, inner-hook target pad, outer-hook target pad, uppercut target pad, kick target pad, focus target pad, and knee target pad.

[0012] A facing target pad is understood to refer to a target pad which is arranged in use such that the striking surface of the target pad substantially faces the user when the user is training using the apparatus. A hook target pad is understood to refer to a target pad arranged in use such that the striking surface of the target pad is at an inclined angle or a substantially perpendicular angle to the user such that it is arranged to receive a hook punch. The skilled person will understand that a hook punch is a swinging punch that does not extend straight from a puncher's body. An uppercut target pad is understood to refer to a target pad which is arranged in use such that the striking surface of the target pad substantially faces the floor. A kick target pad is understood to refer to a target pad which is arranged in use to be kicked. A knee target pad is understood to refer to a target pad which is arranged in use to be struck by a knee of the user.

[0013] Preferably the first target pad is a hook target pad. Preferably the second target pad is a facing target pad.

[0014] The first and second target pads may be mounted on the support member.

[0015] The support member may be adapted to mount three or more target pads.

[0016] The apparatus may comprise a further target pad wherein a striking surface of the further target pad may be substantially perpendicular to the striking surfaces of both the first target pad and the second target pad. The further target pad may be an uppercut target pad. Preferably, in use, the further target pad is mounted beneath the first target pad.

[0017] The training apparatus of the invention has an advantage that it provides multiple targets for a user to practice different punches and punching angles. Advantageously, the user can practice hook punches as well as straight punches such as jabs on the same apparatus. The target pads are advantageously supported so that they do not significantly move away from the strike when struck by a user. Preferably the target pads are fixed in position, and are able to move less than 5 cm, preferably less than 2 cm, when struck, preferably they do not move

at all. The fixed target pad provides enough feedback to the user so that it feels like the strike has hit with enough power without causing injury to the fighter. The training apparatus also has the benefit of being useful just for exercise or to improve fitness.

[0018] An additional benefit of the training apparatus is that it can hold pads for the user to train for as long as the user wants. The training apparatus can also hold more target pads than a training partner. Conventionally pads are held by a training partner who can get tired or injured. The benefit of the apparatus of the invention is that it removes the need for a training partner and allows the user to train when and how they like and without injuring or tiring anybody else.

[0019] The support member may be adapted to be fixed to a floor and/or a wall, and/or a ceiling. Preferably the support member is adapted to be fixed to both the floor and the ceiling. Alternatively the support may be adapted to be fixed to the floor or ceiling at one end and to a wall at the other end, or to a wall at both ends. Preferably, when the training apparatus is set up for use, the support member is substantially vertical. The support member may be part of a frame, wherein the frame may be free standing or secured to the floor and/or wall and/or ceiling. If free standing, the frame may be weighted to hold it in position.

[0020] The support member may comprise at least one fixing mechanism to fix the support member to the ceiling and/or floor and/or wall and/or frame in order to prevent movement of the support member. Preferably the support member is adapted to be fixed in position at both ends. The fixing mechanism may permanently, reversibly or releasably fix the support member in position. The fixing mechanism used may be selected from the group comprising bolting, a tongue and groove mechanism, screwing, spiking, nailing, clamping, welding, hooking, latching and cementing the support member in a hole, or combinations thereof. Preferably the support member is adapted to be fixed by bolting, through a bolt plate to the floor, ceiling, wall and/or support frame. Preferably the support member comprises a bolt plate at either end of the support member. The bolt plate may comprise holes for bolts or screws to be put through. The bolt plate may be integral with the support member or mounted to the support member.

[0021] The support member may comprise one or more shock absorbers. A shock absorber may be positioned at an end of the support member before or adjacent the fixing means. Shock absorbers may be at one end or both ends of the support member. Preferably the shock absorber is between the body of the support member and a bolt plate. Preferably the shock absorber is a section of resilient material.

[0022] Where the support member is mounted to a wall, one or more shock absorbing pads may be arranged to be mounted to the wall, to prevent the support member hitting the wall during use.

[0023] The shock absorber may be a coil spring and/or a leaf spring, and/or a section of rubber, and/or a hydraulic mechanism and/or an electrical mechanism and/or a magnetic mechanism. Preferably the shock absorber is made of rubber. The shock absorber may allow some movement of the support member or the whole apparatus in order to absorb shocks to the apparatus arising when the target pads are hit or kicked. Preferably the movement of the support member allowed by the shock absorbers when the apparatus experiences a shock is no more than about 10 cm. Preferably the movement is no more than about 5 cm, or no more than about 2 cm or about 1 cm. Preferably the movement of the support member allowed by the shock absorber is no more than about 0.5 cm. The resilience or shock-absorbing qualities of the shock absorber may be adjustable.

[0024] The use of one or more shock absorbers on the support member reduces the risk of a user damaging their hand, wrist, foot, leg or arm when they strike the apparatus. The shock absorber allows the target pads to be fixed into position on the support member, with no twisting or rotational movement and to provide some shock absorbing action. The shock absorbers according to this invention have the advantage of allowing a positive feel or feedback when the user strikes the apparatus. The user is more likely to enjoy striking the target pads when a shock absorber is used, thereby encouraging more training. The shock absorbers have the benefit of allowing the support member to be more resistant to breakage through stress and wear on the support member

[0025] Fixing the support member to a floor and/or wall and/or ceiling and/or frame has the advantage that the support member will not move when the user strikes the apparatus. Fixing the apparatus to a wall, ceiling, floor means that no weights are needed to hold it in place. Weights can be large and heavy and can get in the way of the users footwork, which can be dangerous.

[0026] Preferably the support member is configured as a support member on which components, including target pads, are mounted.

[0027] The support member may comprise one or more wall mountings.

[0028] Preferably the support member is substantially straight. The support member may have a substantially square, rectangular, triangular, oval or circular cross-section. The support member may be from about 0.5 m to about 10 m in length, or more. Preferably the support member is about 2 m to about 6 m in length. The support member may have a diameter of about 2 cm to about 10 cm.

[0029] Preferably the apparatus has a single support member. Advantageously a single support member is easy and cheap to manufacture and easy to transport and install. A single support member has the benefit of only requiring a minimal contact point with the floor of the room, which prevents the user from tripping over the apparatus when training on the apparatus. The use of a single support member has the advantage of saving

space in the users training room or gym.

[0030] The length of the support member may be adjustable. Preferably the support member is telescopic, allowing it to expand and contract in length. The length of the support member may be adjusted by hand or by an automatic drive mechanism and/or mechanical mechanism. The benefit of an adjustable length for the support member means that the apparatus can be installed in rooms of various heights.

[0031] Preferably the support member does not bend and/or twist. The support member may be made of metal or other suitable material. Preferably the support member prevents any significant movement in the apparatus during use.

[0032] The support member may include one or more mounting points for components to be fitted to the support member. The mounting points may be holes and/or slots and/or suitable quick release fixing mechanisms. The support member may have a plurality of points for mounting components to the support member. Preferably the support member has a series of holes spaced along its length. Preferably the holes allow the target pads and additional components to be mounted at different heights according to the users requirements.

[0033] The target pads may be permanently or releasably mounted to the support member. The apparatus may comprise a two or more target pads. The apparatus may comprise two or more target pads at different positions and/or angles. Preferably the first and/or second target pad is interchangeable with one or more alternative target pads. Preferably the one or more alternative target pads are arranged to be at angles and/or positions different to that of the first and/or second target pads.

[0034] The advantage of having a plurality of target pads, and target pads at different positions and/or angles is that the user can choose to strike with or train different types of punches or kicks on the same apparatus. Providing pads at different angles advantageously provides flexibility in the training regime of the user. Additionally the benefit of having pads at various positions and angles means that a user does not need additional equipment or apparatus to train or practice different aspects of their fighting skills.

[0035] The target pads may be mounted to the support member by a target pad mounting. The target pad mounting may be selected from the group comprising a sleeve, hook, tongue and groove mechanism, bolt, peg, clamp, tie, weld, and any suitable mounting mechanism, or combinations thereof. Preferably the target pad mounting comprises a sleeve. Preferably the target pad mounting can be positioned at various positions up and down the length of the support member. Where the target pad mounting is a sleeve, the sleeve may be slidably mounted onto the support member and is adapted to be fixed into position on the support member with quick release pegs. Preferably the mechanism used to secure the target pads on the support member is a quick release mechanism. The target pad mounting may be secured into place on the support member by bolting and/or pegging, and/or clamping. Preferably the target pad mounting is secured into position using pegs. The pegs may be placed through holes in the target pad mounting and corresponding holes in the support member. Preferably the pegs have rings attached or other gripping means to allow a user to remove the peg.

[0036] Providing a target pad mounting that allows the target pads to be mounted at various positions along the length of the support member provides the benefit of allowing the apparatus to be adjusted for different heights of the user. Advantageously a child can use the apparatus on a lower height setting and then an adult could easily change the mounting position of the target pads to a higher height.

[0037] The two or more target pads may be connected to/mounted on the support member by one or more arms.

[0038] The length and/or angle of the arms may be manually or automatically adjustable. Preferably the length and/or angle of the arms is adjustable by hydraulic means. The arms may be provided so that they are capable of automatically extending in length. Preferably one or more pads are capable of extending towards the user during use. Preferably the arms are attached or integral to the target pad mounting. Preferably the arms project from the target pad mounting. One, two, three, four, five, six or more arms may be connected to a target pad mounting. The arms may be mounted directly to the support member or to a target pad mounting. Preferably all the arms holding the hook target pads are mounted to the support member via one or more target pad mountings. Where there are two or more arms, the arms may project out from the support member in different directions. Preferably, two or more arms project out from the support member along the same plane. Preferably the arms project at an angle substantially perpendicular to, or angle relative to, the longitudinal axis of the support member. Preferably the arms project substantially perpendicularly away from the longitudinal axis of the support member. Preferably an arm may be L-shaped. Where there is more than one arm, the combined arm structure may be substantially U-shaped. A target pad mounting may allow one or more target pads to be mounted to the support member. The one or more target pads may be connected to the mounting by one or more arms. Preferably the arms are substantially rigid. One or more arms may support one or more facing target pads. Preferably opposing target pads are held on arms such that they form a substantially U-shaped structure.

[0039] The arms provide a benefit of distancing the target pads away from the support member to allow greater access and angles for the user to strike the target pads. The support member is advantageously out of the striking range or path of the user and away from the feet of the user. Holding target pads apart on arms has the benefit of providing pads either side of the user in order to train both left and right strikes without having to dramatically shift position

[0040] The arms may include shock absorbers. Preferably the shock absorbers on the arms consist of a hydraulic mechanism and/or spring mechanism and/or resilient material. The shock absorbers on the arms may be positioned adjacent to the target pad mounting and/or adjacent to the target pads and/or midway along an arm between the target pad and the target pad mounting.

[0041] One or more target pads may be mounted to the apparatus by a target pad support, either directly or via an arm. Preferably one or more of the target pads are mounted to the apparatus by a target pad support attached to an arm. Preferably the target pad support is at the free end of an arm that holds a target pad, that is the end which is not connected to the support member or target pad mounting. Preferably the target pad support is used to mount the target pad to the apparatus, either directly to the support member or via an arm for the support member. The target pad support may be integral with or attached to, the arm. The longitudinal axis of the target pad support, when in use, may be at an angle substantially perpendicular to the floor. Preferably the target pad support is a vertical beam or a plate.

[0042] At least one target pad may be supported by a target pad support on the opposite side of the target pad relative to the striking surface. The target pad support may be substantially parallel with the striking surface of the target pad.

[0043] The target pad support may be made of metal or other suitable rigid material. Preferably the target pad support is substantially hidden by the target pad, either in or behind the target pad. Thus if the strike is incorrectly executed and is too high or too low to hit the target pad, the user will not hit the target pad support and be injured. The target pad support may support at least one target pad. Preferably the target pad support supports two opposing pads, which have striking surfaces facing opposite directions.

[0044] Preferably one or more target pads are adapted to be mounted to the apparatus such that they are not capable of swinging and/or twisting and/or rotating relative to the apparatus. Preferably the target pads are adapted to be mounted to the apparatus such that they are incapable of moving more than 5 cm in any direction relative to the apparatus when struck by a user.

[0045] The advantage of the target pad being unable to rotate is that it prevents injury to the wrist or hand of the user. Supporting the target pad with a target pad support on the opposite side of the target pad relative to the striking surface and having the target pad support substantially parallel with the striking surface of the target pad has the benefit of preventing the pad from twisting, swinging or buckling when struck. The angle of the striking surface of at least one target pad may be fixed relative to the angle of the target pad support. Preferably one or more of the target pads are maintained in substantially the same position when hit, rather than swinging or turning away from the strike. This prevents the user from having to wait for the target pad to come back to a certain position after it has been hit and prevents the user from having to change their angle or distance of attack in order to reach the target pad. Where there are two arms or a pair of arms projecting from the support member, the arms may each hold a target pad support. In this arrangement there are preferably two target pad supports.

[0046] One or more facing target pads may be connected to the support member via one or more target pad mountings. The facing target pads may be mounted directly to the support member or mounted via one or more arms to the support member. Preferably a striking surface of the facing target pad is parallel to the longitudinal axis of the support member. Preferably there are two facing target pads.

[0047] The facing target pad has the advantage of allowing the user to train straight punches such as jabs. The user may advantageously use the facing target pad with the hook target pads to train combinations of strikes.

[0048] The training apparatus may comprise one or more hook target pads. Preferably the striking surfaces of the hook target pads are inclined relative to the striking surface of the facing target pads. The striking surface of the one or more hook target pads is preferably substantially perpendicular to the striking surface of one or more facing target pads. Preferably the training apparatus comprises two or four hook target pads. A hook target pad may have two striking surfaces facing in different, or preferably opposing, directions. Where there are two hook target pads, the striking surfaces of each pad may face in the same or opposite directions. Preferably there are four striking surfaces for hook punches and/or kicks. The striking surfaces for hook punches and/or kicks may be provided on four target pads configured in two pairs of juxtaposed target pads, or two target pads, each with two opposing striking surfaces. Preferably there are eight hook target pads configured as four pairs of juxtaposed target pads, wherein two of the pairs of target pads are spaced from the other two pairs of target pads by more than 40 cm. Arms may hold target pads and/or pairs of juxtaposed target pads distanced apart from each other from about 40 centimetres to about 200 centimetres. Preferably arms hold target pads and/or pairs of juxtaposed target pads apart from each other at a distance of about 60 centimetres to about 120 centimetres. In an alternative embodiment, preferably there is one pair of juxtaposed target pads with the striking surfaces facing in opposing directions.

[0049] The advantage of providing one or more hook target pads with striking surfaces facing in opposite directions and at an inclined angle relative to the striking surface of the facing target pad is that the striking surfaces are at a correct angle to receive a hooking strike from a user. This prevents injury to the user and trains the user to strike at the correct angle for a hook punch, where the aim of a fighter using a hook punch is to strike an opponent from a sideways angle.

[0050] In an alternative embodiment, a facing target pad and a hook target pad may be integral, such that it

forms a substantially L-shaped target pad. If there are two hook target pads and a facing target pad, they may form a substantially U-shaped target pad.

[0051] The training apparatus may include a lower-kick target pad structure. Preferably the lower-kick target pad structure is attached to the support member below a facing target pad and/or a hook target pad. The lower-kick target pad structure may comprise at least one kick target pad. The kick target pad may be mounted less than about 4ft from the floor. The kick target pad may be mounted directly to the support member. The kick target pad may be mounted to a sleeve; said sleeve may be mounted on the support member. Preferably the kick target pad is connected to the support member via an arm. Preferably the kick target pad is mounted to a target pad support which is used to mount the kick target pad to the arm and/or support member. The kick target pad may have a striking surface on all sides or on all sides except the side where it is mounted to the support member. Preferably there are two juxtaposed kick target pads.

[0052] Preferably, when mounted, the striking surface of the two kick target pads face in opposite directions. Preferably, in use, the striking surface of the kick target pad is substantially perpendicular to the floor. Preferably the position of the lower-kick target pad structure can be adjusted along the length of the support member. Preferably the sleeve of the lower-kick target pad structure can be fixed in various positions on the support member. The sleeve of the lower-kick target pad structure may comprise holes that correspond to holes in the support member allowing a peg to be used to fix the pads into position.

[0053] The lower kick-pad structure provides the benefit of allowing the apparatus to be used by a martial artist or kick-boxer, who are required to train their legs to kick. Additional benefits of providing a lower-kick target pad structure is that it can be used to train in conjunction with the facing target pads and hook target pads in order to practice combinations of punches and kicks.

[0054] The training apparatus may also comprise an uppercut target pad. Preferably the uppercut target pad is mounted on the support member or on an arm mounted on the support member. Preferably, in use, the uppercut target pad is mounted more than about 1.5 m from the floor. The uppercut target pad may be pivotably mounted to the support member or to an arm on mounted on the support member. Preferably the uppercut target pad is pivotably connected to the support member. The uppercut target pad may be pivotably connected to the support member via one or more links. The links may be a single, or pair, of bars or plates that can be mounted onto the support member and fixed to the pad. Preferably the links are fixed to the uppercut target pad and pivotably connected to the support member. Preferably, in use, the striking surface of the uppercut target pad faces the floor. The uppercut target pad may be resiliently held in the floor facing position. Preferably the striking surface of an uppercut target pad is held in a floor facing position by gravity. Preferably when a user strikes the uppercut target pad, the uppercut target pad pivots away from the strike and then returns back to the original position.

[0055] In use, one or more uppercut target pads may be mounted beneath the hook target pad.

[0056] The advantage of providing an uppercut target pad is that a user can practice uppercut strikes in addition to other strikes. The benefit of the pivotably mounted uppercut target pad is that it recreates the feeling of a persons chin when it is struck with an uppercut punch.

[0057] The training apparatus may comprise at least one knee target pad. Preferably the apparatus comprises five knee target pads. The knee target pads may be mounted on the support member below the facing target pads and hook target pads. Preferably, in use, the knee target pads are mounted between about 0.5 m and about 1.5 m from the floor. Where a kick target pad is used, the knee target pads are preferably mounted above the kick target pad. One or more knee target pads may be pivotably mounted to the support member or an arm mounted on the support member. Alternatively, the knee target pads may be fixed in position. Preferably, in use, the target surface of at least one knee target pad is angled towards the floor. Preferably the target surface of at least on knee target pad is angled from about 0° to about 60° relative to the floor. Preferably the target surface of the knee target pad is angled at about 45° relative to the floor. The angle of the knee target pads may be manually or automatically adjustable. Preferably there are three knee target pads that are angled from about 0° to about 60° relative to the floor and/or relative to other knee target pads. The knee target pad may be a single target pad with two opposing striking surfaces, or the knee target pad may be a pair of juxtaposed pads with striking surfaces facing in opposite directions. Preferably the knee target pad has a striking surface extending substantially around each side of the knee target pad. Preferably the knee target pad is adapted to be struck by a user on all sides of the target pad except from the side facing the support member, i.e. the side used to mount the target pad. Preferably there are two opposing pairs of knee target pads mounted on arms and one central knee target pad mounted on a central arm.

[0058] Providing a knee target pad has the benefit of providing additional training to martial artists or kick-boxers who are required to strike using the knee. The pivotably mounted knee target pad has the benefit of preventing injury to the user by moving away from the strike to absorb the impact.

[0059] The angle and/or position of one or more target pads may be adjustable either manually, mechanically and/or automatically. The adjustment of the angle and/or position of the target pads may be controlled by a computer.

[0060] The striking surface of a target pad may be soft. Preferably the striking surface of a target pad is deformable. Preferably the striking surface of a target pad is cushioned. The striking surface of the target pad may

have varying levels of density.

[0061] Target pads may comprise a base plate on or under the surface opposite the striking surface. The base plate may be mounted onto the target pad support and/or directly to an arm. Where the target pad has two opposing striking surfaces, the base plate may be located in the middle of the target pad in between the two striking surfaces. Preferably the base plate provides rigidity or semi-rigidity to the target pads. The target pads may comprise a single block of material or multiple layers of material. The target pads may comprise any one of the group comprising foam, rubber, textile material, leather, plastic, gel, sand, beads, powder, granules, paper and any other suitably soft resilient material, or combinations thereof. The target pads may be air and/or liquid filled.

[0062] The rigid or semi-rigid base plate has the benefit of providing structural support to the target pad and allows a secure mounting point for the target pads to be mounted onto an arm, or to the target pad support.

[0063] The benefit of using multiple layers of material is that the structural integrity of different areas or surfaces of the target pads can be easily controlled in manufacture. Different layers provide the benefit of different resilience and/or hardness throughout the target pad.

[0064] The target pads may comprise an outer skin or layer. The outer skin may be made from any one of the group comprising leather, rubber, PVC, plastic, textile material or combinations thereof.

[0065] An outer skin on the target pads has the advantage of being protective to the material it is covering and it can also help to hold the material in place. The outer skin has the benefit that it may be washable. The outer skin advantageously provides a surface to the target pad which does not injure or chafe the users hand when it is struck, and it provides a comfortable feeling for the user to strike the target pad. Preferably the outer skin covers the base plate of the target pad.

[0066] The target pads may include at least one target spot. A target spot may be a painted or printed image. Preferably the target spot is a printed onto the surface of the target pad. Alternatively the target spot may be an additional layer of material glued or sewn onto the surface of the target pad. Preferably the target spot is a spot. Preferably there are three target spots on each target pad.

[0067] Advantageously, the target spots identify which area of the target pad should be struck by the user. The benefit of printing or painting the target spot on the surface is that there is no raised edge to the target spot which can graze a users hand.

[0068] The apparatus may comprise target pad covers. Preferably the target pad covers, cover pairs of target pads. Preferably the target pad cover conceals the target pad support. Preferably the target pad cover comprises padding to protect the user if a non-striking surface is struck. Preferably the target pad covers are secured with Velcro and/or studs. The target pad covers may comprise target spots and/or advertising.

[0069] The benefit of target pad covers is that they may be aesthetically pleasing. The target pad covers have the advantage of protecting the target pads from damage. Additional benefits of target pad covers are that the user may want to change the colours of the apparatus, provide advertisements or slogans on the apparatus, or change the image of the target spots.

[0070] The target pads may be fixed to an arm, and/or a target pad support and/or a support member by any suitable means, this may be selected from the group comprising bolts, pegs, screws, clamps, clips, hooks, tongue and groove, adhesive, rope and wire, or combinations thereof. Preferably the mounting allows the target pads to move relative to the support member and/or arms. This may be achieved by a bolt located in a slot in the target pad support or arm or target pad. Preferably the mounting allows lateral or forward and backward movement of the target pad in.

[0071] The benefit of mounting with bolts located in a slot is that the target pad can be secured in position, but can still experience some movement when it is struck during use. This helps to absorb shock from the strike and prevent damage to a users hand and/or wrist.

[0072] One or more target pads may be resiliently mounted to the target pad support and/or arms and/or support member such that the target pad is pushed away from its mounting. The target pads may be resiliently contacted and/or attached to springs and/or hydraulic pistons and/or rubber and/or magnets, and/or electromagnets and/or other resilient material. Preferably the target pad is contacted with springs. Preferably the springs force the target pad away from its mounting.

[0073] The resilience of the target pad mounting advantageously provides a positive feedback to the user when it is struck. Another benefit of providing resilience is that the target pad is quickly returned to position in order to absorb the shock of a follow up strike.

[0074] In one embodiment, the apparatus comprises a pair of hook target pads and a facing target pad mounted on a secondary support member. The secondary support member may be mounted to the support member. Preferably the secondary support member is parallel to the support member. Preferably the pair of hook target pads project out from the apparatus on the same plane as the longitudinal axis of the secondary support member. Preferably, in use, the facing target pad is positioned above the hook target pads. Preferably the striking surfaces of the hook target pads are substantially perpendicular to a striking surface of the facing target pad. One or more arms may connect the target pads to the secondary support member, preferably the target pads are mounted directly on the secondary spine. In this embodiment, the hook target pads may be spaced apart from about 1 cm to about 20 cm. Preferably in this embodiment the hook target pads are spaced apart by about 4 cm to about 10 cm.

[0075] The advantage of providing a pair of hook target pads is that the apparatus is slimmer and takes up less

space. The user has the benefit of being able to practice a variety of different strikes, with a slim apparatus that will fit into a small area.

[0076] According to another aspect, the invention provides a training apparatus comprising a support member arranged to be mounted on a frame, wherein the support member is arranged to be mounted to the frame via a shock absorbing mechanism.

[0077] According to another aspect, the invention provides a training apparatus comprising a support member mounted on a frame, wherein the support member is mounted to the frame via a shock absorbing mechanism.

[0078] The frame may comprise at least two posts, preferably at least 3 posts. Preferably at least one of the posts comprises the support member. The support member may be adapted to mount one or more target pads. Preferably the ends of each post are connected to each other via a crossbar. Preferably the frame is a substantially triangular prism shape. The frame may be free standing, or fixed to a wall and/or floor and/or ceiling. Providing a frame has the advantage of providing a substantial support for the support member without the need to fix it to a ceiling, wall, or floor. Two or more frames may be fixed or positioned together to provide multiple training apparatus in a small area. Four frames may be used, for example in a gym environment, to form a substantially square structure with a training apparatus at each corner.

[0079] The training apparatus according to all aspects and embodiments of the invention may be adapted for safety by covering non-striking surfaces with cushioning material. Preferably exposed areas of the support member and/or target pad support and/or arms are cushioned. Preferably, parts of the apparatus that are not intended to be struck by a user are covered. Preferably only the parts of the apparatus that are adjacent to the target pads are cushioned. The cushioning may be a deformable material and/or soft material. Preferably the cushioning is foam. The covering may be attached to the apparatus by tying, wrapping, zipping, taping, pinning, or hook and loop fabric, such as Velcro™.

[0080] Covering the surfaces of the apparatus that are not intended to be struck has the advantage of preventing injury to the user if they accidentally hit the wrong part of the apparatus. Another benefit of covering non-striking surfaces is that the appearance of the apparatus can be changed to be more aesthetic, or for displaying advertisements.

[0081] The training apparatus according to all aspects and embodiments of the invention may include at least one sensor. The sensors may be electronic sensors. Preferably at least one target pad comprises one or more sensors. Preferably all target pads have at least one sensor. The sensor may be used to detect striking force and/or striking frequency and/or striking quantity. A plurality of sensors may be used to detect different properties. Preferably the sensors are linked to a computer. Preferably the sensors linked to the computer give feedback to a user and/or trainer. The sensors may be used to monitor the physical properties of a user. Preferably a sensor is used to monitor the heart rate of a user and/or calories used and/or length of time the user has used the apparatus.

[0082] Having sensors in the apparatus has the benefit of providing information to the user about their use of the apparatus. The sensors advantageously encourage the user to train correctly, with more speed, accuracy and/or power. The sensors have the advantage of providing feedback to the user. The sensors have the benefit of making the apparatus more interactive, which can encourage users to train more frequently or longer.

[0083] The apparatus according to all aspects and embodiments of the invention may include an audio system. The audio system may be selected form the group comprising a tape player, CD player, radio, MP3 player and electronic media player or combinations thereof. The audio system may provide motivational speeches and/or music. The audio system may provide audible training instructions. Preferably the audio system provides prerecorded audible training guides. Preferably a variety of audio training programs can be selected by the user. The audio system may be linked to the sensors. The audio system may be linked to a computer that can change the audio output of the audio system. The audio system may be positioned at any convenient location on the apparatus, or remote from the apparatus. Preferably the audio system is positioned on the support member.

[0084] The audio system has the advantage of making the apparatus more entertaining to use, encouraging more frequent and longer use. The audio system also has the advantage of provide training programmes or guidance to a user. A benefit of the audio system is that it can play music or speeches to motivate the user.

[0085] The apparatus according to all aspects and embodiments of the invention may include light indicators. The light indicators may provide a training guide. The light indicators may be light emitting diodes LEDs or light bulbs. The light indicators may be positioned adjacent to target pads and/or inside the target pads and/or on the arms and/or of the support member and/or adjacent the apparatus. Preferably the light indicators are controlled by a computer. The light indicators may be linked to the sensors directly or via a computer. Preferably the light indicators are responsive to the feedback provided from the sensors. The light indicators may be linked to the audio system. Preferably the light indicators, audio system and sensors are linked to in order to sense physical properties associated with the apparatus and/or the user and to provide feedback to the user.

[0086] The light indicators have the advantage of making the apparatus more interactive for users with poor or no hearing. The light indicators provide the benefit of giving feedback to the user, or leading the user to strike specific pads at a predefined frequency. The light indicators have the advantage of signalling to the user when to stop, start, or change training on the apparatus.

[0087] The apparatus according to all aspects and embodiments of the invention may include a camera. Preferably the camera is mounted on or near to the apparatus. The camera may be used to film a user during training. The benefit of a camera mounted on or near to the apparatus is that it can provide a record of the users training, allowing feedback to the user in order to improve their training.

[0088] Providing a linked audio, lighting, camera and sensors in the apparatus has the advantage of increasing efficiency of training and interactivity of training.

[0089] The apparatus may also comprise at least one focus target pad. The one or more focus target pads may be adapted to be suspended from the apparatus. Preferably the focus target pads are adapted to be suspended between the apparatus and a wall and/or ceiling and/or floor. The shape of the striking surface of the focus target pads may be selected from the group comprising circular, oval, domed, rectangular, square or combinations thereof. Preferably the focus target pads are adapted to be suspended by a cable and/or rope and/or elastic material. Preferably the focus target pads are adapted to be suspended on a cable. The focus target pads may be adapted to be fixed to the apparatus via the cable with a bolt and/or clamp and/or hook and/or other suitable affixing means. Preferably a focus target pad is adapted to be attached to both the apparatus, via the target pad support, and the ceiling. Preferably the apparatus has two focus target pads each connected either side of the apparatus via the target pad supports. Preferably a further two focus target pads are provided either side of the apparatus, which are adapted to be connected to both the support member, below the facing target pads and hook target pads, and a wall.

[0090] Providing focus target pads has the advantage of providing a range of different striking points for a martial artist or kick-boxer, who often train to strike at various angles to various areas of an opponent.

[0091] According to another aspect, the invention provides a training apparatus comprising at least two target pads and means to attach the target pads to a support member, wherein, the target pads are adapted to be mounted into a position where a striking surface of the first target pad is inclined relative to a striking surface of the second target pad.

[0092] According to another aspect of the invention there provided a kit comprising a training apparatus according to any aspect of the invention and instructions to use and/or build the apparatus.

[0093] The kit may also comprise an audio programme and/or guide. Preferably the kit includes an audio tape or CD. Preferably the audio programme is a training guide to be used with the apparatus.

[0094] The kit may comprise a video or DVD. The kit may comprise a pair of boxing gloves or mitts.

[0095] The skilled man will appreciate that the preferred features of any aspects of the invention described herein may be applied to all aspects of the invention.

[0096] Embodiments of the invention will now be described in more detail, by way of example only, with reference to the accompanying drawings.

Figure 1 shows a perspective view of a fight training apparatus according to a first embodiment of the invention;

Figure 2 shows a front view of a fight training apparatus according to a first embodiment of the invention;

Figure 3 shows a front view of the apparatus according to the first embodiment of the invention, as described in Figures 1 and 3, with additional components;

Figure 4 shows facing target pads and hook target pads together with arms and a target pad mounting according to the first embodiment of the invention. **Figure 4A** shows a front view of the facing target pads and hook target pads. **Figure 4B** shows a front view of the arms, target pad mounting and pad support of the facing target pads and hook target pads with no target pads attached. **Figure 4C** shows a side view of the arms, target pad mounting and pad support of the facing target pads and hook target pads with no target pads attached. **Figure 4D** shows a plan view of the arms, target pad mounting and pad support of the facing target pads and hook target pads with no target pads attached;

Figure 5 shows detail of lower focus target pads according an embodiment of the invention;

Figure 6 shows a perspective view of a fight training apparatus according to a second embodiment of the invention;

Figure 7 shows a front view of a fight training apparatus according to a second embodiment of the invention;

Figure 8 shows a side view of a fight training apparatus according to a second embodiment of the invention;

Figure 9 shows a front view of a fight training apparatus according to a second embodiment of the invention with additional components;

Figure 10 shows a side view of a fight training apparatus according to a second embodiment of the invention with additional components;

Figure 11 shows a lower-kick target pad structure. **Figure 11A** shows the lower-kick target pad structure with the kick target pads and shock absorbing

springs removed. **Figure 11B** shows a front view of the lower-kick target pad structure with the kick target pads mounted in position and engaging shock absorbing springs;

Figure 12 shows a perspective view of a target pad and details of the mounting mechanism on a target pad support;

Figure 13 shows a perspective view of the arms, target pad mounting and pad support of the facing target pad and hook target pads with no target pads attached according to the second embodiment of the invention;

Figure 14 shows a detailed side view of the support member and fixing mechanism;

Figure 15 shows a perspective view of a target pad cover.

Figure 16 shows a perspective view of the apparatus according to another embodiment of the invention, with no target pads mounted.

Figure 17 shows a front view of knee target pads.

Figure 18 shows a perspective view of the apparatus as shown in Figure 16, with the target pads mounted.

[0097] Referring to Figures 1 and 2, which respectively show a perspective view and a front view of a fight training apparatus 1 according to a first embodiment of the invention. The apparatus 1 comprises a support member 3, which is adapted to be bolted at either end to the floor and ceiling via bolt plates 5. The bolt plates 5 and the support member 3 are connected through rubber shock absorbers 7, which allow for a small resilient movement of the support member 3 relative to the floor and ceiling, when it is bolted into position. The support member 3 has multiple peg-holes 4 spaced along its length to allow for height adjustments of the components mounted on the support member 3.

[0098] A sleeve 9 is mounted onto the support member 3. The sleeve has peg holes (not shown) that allow pegs 10 to be inserted through the sleeve and into corresponding peg holes 4 of the support member 3. The pegs 10 fix the sleeve 9 into position on the support member 3.

[0099] A pair of arms 11, 13 projects from the sleeve 9 at an angle substantially perpendicular to the longitudinal axis of the support member 3. The pairs of arms 11, 13 are substantially L-shaped. Two facing target pads 31 are centrally mounted to the arms 11, 13, one above the other. Striking surfaces 25' of the facing target pads face away from the support member 3, and during use the striking surfaces 25' would face the user. Each arm pair 11, 13 holds a single target pad support 19. The target pad supports 19 are held by the arms 11, 13 at a vertical position and at an angle parallel to the longitudinal axis of the support member 3. Mounted on each target pad support 19 is a pair of juxtaposed hook target pads 21, 23, such that there are two pairs of opposing hook target pads 21, 23. The pairs of juxtaposed hook target pads 21, 23 are substantially parallel to each other, and the striking surfaces 25 of each pair of hook target pads 21, 23 face in opposing directions. The two pairs of hook target pads 21, 23 are spaced apart from each other by the arms at a distance of about 70 cm. The striking surfaces 25, 25' of the facing target pads 31 and the hook target pads 21, 23 are inclined relative to each other, such that the facing target pads 31 and two pairs of hook target pads 21, 23 form a substantially U-shaped target pad structure. An optional uppercut target pad 37' (shown in Figure 2 only) may be mounted on each arm 11, 13. The uppercut target pads 37' are positioned beneath the hook target pads 21, 23, and their striking surfaces substantially face the floor. The striking surfaces of the uppercut target pads 37' are substantially perpendicular to both the hook target pads 21, 23 and the facing target pads 31.

[0100] The striking surface 25, 25' of all target pads 21, 23, 31, 37' may each have three coloured printed target spots 35 (as shown) as indications to a user where to strike the striking surface 25, 25'.

[0101] Also attached to the support member 3 is an uppercut target pad 37 positioned above the facing target pads 31 and hook target pads 21, 23. The uppercut target pad 37 is pivotably mounted to the support member 3 via a backing plate 39, which comprises links 41 that flank the support member 3. The links 41 have peg-holes (not shown), which allow the uppercut target pad 37 to be pivotably mounted to the support member 3 with a peg 10. The striking surface 25'" of the uppercut target pad 37 faces the floor.

[0102] The apparatus also includes a lower-kick target pad structure 43 attached to the support member 3, below the facing target pads 31. The lower-kick target pad structure 43 comprises two juxtaposed kick target pads 45. The kick target pads 45 are attached to the support member 3 via a target pad support 19', which is on the end of a central arm (not shown) projecting from a sleeve (not shown), substantially perpendicularly to the support member 3 and parallel to the floor. The sleeve (not shown) is secured to the support member 3 and bolted into place with pegs (not shown) through the peg-holes 4 in the support member 3. The kick target pads 45 are slidably mounted to and supported by a target pad support 19'. The striking surfaces 25" of the two kick target pads 45 face in opposite directions to each other and away from the central axis of the apparatus 1.

[0103] Referring to Figure 3, which shows a front view of the first embodiment of the invention, as described in Figures 1 and 2. The apparatus 1 has additional components added, namely focus target pads 81, 83. Focus target pads 81, 83 are suspended around the periphery of the apparatus 1. An upper focus target pad 81 is mount-

ed on each side of the apparatus 1 on respective cables 87. One end of each cable 87 is hooked onto the apparatus 1 via a loop 85 on the target pad support 19 on each side of the apparatus 1. The other end of the cable 87 is hooked to the ceiling via a loop 89. The upper focus target pads 81 are suspended midway along their respective cable 87. A lower focus target pad 83 is attached to each side of the apparatus 1 via a cable 87. Each cable 87 is hooked to the support member 3 below the facing target pads 31 and adjacent to a knee target pad 71. The other end of each cable 87 is hooked to a respective wall via a loop 91 fixed to the wall. The lower focus target pads 83 are each suspended midway along their respective cable 87 between the wall (not shown) and the apparatus 1.

[0104] Figure 4 shows the facing target pads 31 and hook target pads 21, 23 according to the first embodiment of the invention in more detail. Figure 4A shows a front view of the facing target pads 31 and hook target pads 21, 23. Two pairs of hook target pads 21, 23 are mounted on arms 11, 13 on either side of the facing target pads 31. The facing target pads 31 are mounted to the arms 11, 13 and the sleeve 9. Figure 4B shows a front view of the arms 11, 13, target pad mounting 9 and target pad supports 19 with no target pads attached. A plurality of shock absorbing springs 27 are inserted through the target pad supports 19. Figure 4C shows a side view of the arms 11, 13, target pad mounting 9 and target pad supports 19 with no target pads attached. Figure 4D shows a plan view of the arms 11, 13, target pad mounting 9 and target pad supports 19 with no target pads attached. Two target pad supports are mounted on the arms 11, 13. The arms 11, 13 are mounted on and project from the sleeve 9. One pair of arms 11 project from the sleeve 9 in the opposite direction from the other pair of arms 13. The arms 11, 13 are L-shaped. A plurality of shock absorbing springs 27 are inserted through a plurality of holes (not shown), which extend through the target pad supports 19.

[0105] Figure 5 shows detail of the lower focus target pads 83 according to the invention. The bottom focus target pads 83 are attached to a cable 87. The cable 87 is adapted to be fixed to a wall, ceiling or floor by a loop 91, which can be bolted into position.

[0106] Figures 6, 7 and 8 show a perspective view, font view and side view respectively of an apparatus 51 according to a second embodiment of the invention. The support member 3 is the same as described above in Figures 1 and 2. In this embodiment, the facing target pad 63 and hook target pads 55 are different to the facing target pads 31 and hook target pads 21, 23 of the first embodiment. The facing target pad 63 and hook target pads 55 are mounted to the support member 3 by a sleeve 9. The sleeve 9 is secured in position on the support member 3 by pegs 10, which are inserted through peg holes (not shown) in the sleeve 9 and corresponding peg holes 4 in the support member 3. A single arm 57 projects from the sleeve 9 substantially perpendicularly to the longitudinal axis of the support member 3. The arm 57 also projects away from the facing target pad 63 substantially perpendicularly to the striking surface 25a of the facing target pad 63. The arm holds a secondary support member 59, which is parallel to the support member 3. The secondary support member 59 forms a target pad support 61, which holds two hook target pads 55 in position. The striking surfaces 25b of the hook target pads 55 face in opposite directions and are substantially perpendicular to the striking surface 25a of the facing target pad 63. The facing target pad 63 is positioned on the secondary support member 59 above the hook target pads 55. The striking surface 25a of the facing target pad 63 faces away from the secondary support member 59. An uppercut target pad 37 is pivotably mounted on the secondary support member 59 above the facing target pad 63. The uppercut target pad 37 is pivotably mounted onto the secondary support member 59 via linking members 41, which are pegged into position with pegs 10 through peg holes (not shown) on the links and corresponding peg holes (not shown) on the secondary support member 59. The apparatus 51 has an audio player 63 mounted near the base of the support member 3 below the hook target pads 55. With reference to Figure 7, the facing target pad 63 and hook target pads 55 are all slidably mounted to the secondary support member 59 or pad support member 61 via bolts (not shown) and the base of each target pad is engaged with shock absorbing springs 27.

[0107] Figures 9 and 10 respectively show the apparatus 51 in front view and side view according to the second embodiment of the invention, with additional components. A knee target pad 71 is pivotably mounted to the support member 3 via linking members 41', below the hook target pads 55. The linking members 41' are pivotably mounted into position on the support member 3 with pegs 10 inserted through peg holes on the linking members (not shown) and corresponding peg holes 4 on the support member 3. The knee target pad 71 projects out from the support member 3 along the same plane as the longitudinal axis of the support member 3 and at an angle of about 45 degrees relative to the floor. The knee target pad 71 can pivot upwards, away from the floor when struck by a user until it is stopped by the support member 3, whereby gravity would return it to a resting position. The knee target pad 71 has a trapezium cross-section and is cushioned on the three sides facing the floor. A lower-kick target pad structure 43 is mounted on the support member 3, below the knee target pad 71. An audio payer 63 is mounted on the support member 3 above the hook target pads 55.

[0108] Figure 11 shows a lower-kick target pad structure 43 according to the invention. Figure 11A shows the lower-kick target pad structure 43 with the kick target pads 45 and shock absorbing springs removed. The lower-kick target pad structure 43 consists of a sleeve 9, an arm 97 projecting from the sleeve 9, and a target pad support 19 supported by the arm 97.

[0109] The sleeve has peg-holes 96 for pegging the

sleeve to the support member (not shown) of the apparatus (not shown). A plurality of holes 95 extend through the target pad support 19 substantially perpendicularly to the longitudinal axis of the target pad support 19. The holes 95 accommodate shock-absorbing springs (not shown). Figure 11B shows a front view of the lower-kick target pad structure 43 with the kick target pads 45 mounted in position and engaging the shock absorbing springs 27. The shock absorbing springs 27 extend from the base or back 29 of a kick target pad 45 through holes 95 in the target pad support 19 to engage the base or back 29 of an opposing kick target pad 45.

[0110] Figure 12 shows a perspective view of the target pad 55 mounting mechanism. This mounting mechanism can be used to mount the hook target pads and kick-pads on the first and second embodiments of the invention. The target pad 55 comprises a base 29. The base 29 has two juxtaposed mounting plates 105 attached thereto. Each mounting plate 105 comprises two bolt-holes 103. The mounting plates 105 are spaced apart enough to accommodate and surround the target pad support 19. The target pad support comprises bolt-holes 107, which correspond to the bolt-holes 103 on the mounting plates 105. The mounting plates 105 are secured to the target pad support 19 with bolts 101, which engage with the slidable bolt-holes 103 on the mounting plates 105 and the bolt-holes 107 on the target pad support 19. The target pad support 19 has a plurality of laterally extending holes 95, which can accommodate shock-absorbing springs (not shown), which would resiliently engage the base 29 of the target pad 55.

[0111] Referring to Figure 13, according to the second embodiment of the invention a first arm 57 projects substantially perpendicularly from the sleeve 9 and holds a target pad support 19 parallel to the sleeve 9. A second arm 111 projects substantially perpendicularly from the sleeve 9 along the same plane as the first arm 57 and holds a secondary support member 59, parallel to the sleeve 9 and parallel to the target pad support 19. The base 113 of the secondary support member 59 is connected to, and supported by, the first arm 57. An uppercut target pad link 41 is pivotably mounted to the top of the secondary support member 59.

[0112] Figure 14 shows a detailed side view of the support member 3 according to the invention. The support member 3 has fixing means 123 by which the support member 3 is adapted to be bolted with bolts 121 at either end of the support member 3 to a floor 125 and ceiling 127 via bolt plates 5, which are located at both ends of the support member 3. The bolt plates 5 and the support member 3 are connected through rubber shock absorbers 7, which allow for a small resilient movement of the support member 3 relative to the floor 125 and ceiling 127, when it is bolted into position.

[0113] Figure 15 shows a perspective view of a target pad cover 131. The target pad cover 131 extends over two surfaces of the target pad (not shown). The target pad cover 131 has Velcro strips 133 to secure the target pad cover 131 into place over the target pads (not shown). The Velcro strips 133 correspond to, and engage with, Velcro strips on the target pads (not shown).

[0114] Figure 16 shows a perspective view of the apparatus according to another embodiment of the invention. A triangle prism shaped frame 201 comprises two posts 203, 205 and a support member 207 mounted on the frame 201 as a third post. The posts 203, 205 are connected at both ends to each other via triangular crossbars 209, 211. The support member 207 is mounted to the frame 201 via rubber shock absorbers 213, 215. The support member 207 also comprises multiple holes 217 spaced along its length to allow for target pads (not shown) to be mounted at various positions onto the support member 207.

[0115] Figure 17 shows a front view of knee target pads 301, 303, 305, 307, 309 according to the invention. The knee target pads 301, 303, 305, 307, 309 are mounted on a sleeve 311 via a pair of L-shaped arms 315. The sleeve 311 mounts onto the support member 317. The knee target pads 301, 303, 305, 307, 309 comprise two upper opposing knee target pads 301, 303 which are parallel to one another and mounted on the free ends of the pair of arms 315, two lower opposing knee target pads 305, 307 mounted on the pair of arms 315 and which are angled relative to each other, and angled at 45° relative to the upper opposing knee target pads 301, 303. A central knee target pad 309 is mounted on a central arm (not shown) located in between the two pairs of opposing knee target pads 301, 303, 305, 307 and is angled at 45° relative to the longitudinal axis of the support member 317.

[0116] Figure 18 shows a perspective view of the apparatus 401 as shown in figure 16 with a plurality of target pads 405 mounted. The target pads 405 are reversibly mounted on the frame 403. The frame 403 has two bolting points 407, for securing the apparatus 401 to the floor (not shown).

Claims

1. A training apparatus comprising a support member and at least a first and a second target pad mounted on the support member, wherein the first and second target pads are mounted on the support member such that a striking surface of the first target pad is inclined relative to a striking surface of the second target pad.

2. A training apparatus according to claim 1, wherein the striking surface of the first target pad is substantially perpendicular to the striking surface of the second target pad.

3. A training apparatus according to claim 1 or claim 2 wherein three or more target pads are mounted to the support member.

4. A training apparatus according to any preceding claim, wherein the striking surface of the first or second target pad is arranged such that in use it faces a user.

5. A training apparatus according to any preceding claim, wherein the support member is mounted on a frame.

6. A training apparatus according to any preceding claim, wherein at least one target pad is supported by a target pad support, wherein the target pad support is positioned on the opposite side of the target pad relative to the striking surface and is substantially parallel with the striking surface of the target pad.

7. A training apparatus comprising a support member and at least a first and a second target pad, wherein the first and second target pads are adapted to be mounted on the support member such that a striking surface of the first target pad is inclined relative to the striking surface of a second target pad.

8. A training apparatus according to claim 7, wherein the first target pad is arranged to be mounted such that the striking surface is substantially perpendicular to the striking surface of the second target pad.

9. A training apparatus according to claim 7 or 8, wherein the first or second target pad is arranged to be mounted such that in use the striking surface faces a user.

10. A training apparatus according to any of claims 7 to 9, wherein the support member is arranged to be mounted on a frame.

11. A training apparatus according any of claims 7 to 10, wherein the first and/or second target pad is arranged to be interchangeable with one or more alternative target pads that are adapted to be mounted at a different angle and/or position to the first and/or second target pad.

12. A training apparatus according to any preceding claim wherein the support member includes a shock absorbing mechanism.

13. A training apparatus according to claim 12, wherein the frame comprises at least two or three posts and at least one of the posts comprises the support member.

14. A training apparatus according to any preceding claim, wherein the support member is adapted to be fixed to a floor and/or wall and/or ceiling via a fixing mechanism.

15. A training apparatus according to any preceding claim, wherein at least one target pad is a hook target pad.

16. A training apparatus according to any preceding claim, wherein at least one target pad is mounted on a shock absorber.

17. A training apparatus according to any preceding claim, wherein one or more target pads are adapted to be non-rotational during use.

18. A training apparatus according to any preceding claim, wherein the height of one or more of the target pads is adjustable.

19. A training apparatus according to any preceding claim, further comprising one or more of an uppercut target pad, a lower-kick target pad and at least one knee target pad.

20. A training apparatus according to any preceding claim, wherein the first and/or second target pad is interchangeable with one or more alternative target pads arranged to be at a different angle and/or position to the first and/or second target pads.

21. A training apparatus according to any preceding claim, further comprising one or more of an audio system, sensors, light indicators and a camera.

22. A training apparatus according to any preceding claim, further adapted to send and/or receive information to and/or from a computer.

23. A training apparatus according to any preceding claim comprising at least two first or hook target pads wherein the striking surfaces of the at least two first or hook target pads are substantially perpendicular to the striking surface of a second or facing target pad.

24. A training apparatus according to claim 23 wherein the striking surfaces of the least two first or hook target pads are parallel.

25. A training apparatus according to according to claim 23 or 24 wherein the striking surfaces of the at least two first or hook target pads face each other.

26. A training apparatus according to claim 25 wherein the striking surfaces of the at least two first or hook target pads are at least 40cm apart.

27. A training apparatus according to according to claim 24 wherein the striking surfaces of the at least two first or hook target pads face in opposite directions.

28. A kit comprising the training apparatus according to any preceding claim and instructions to use the apparatus.

Figure 1

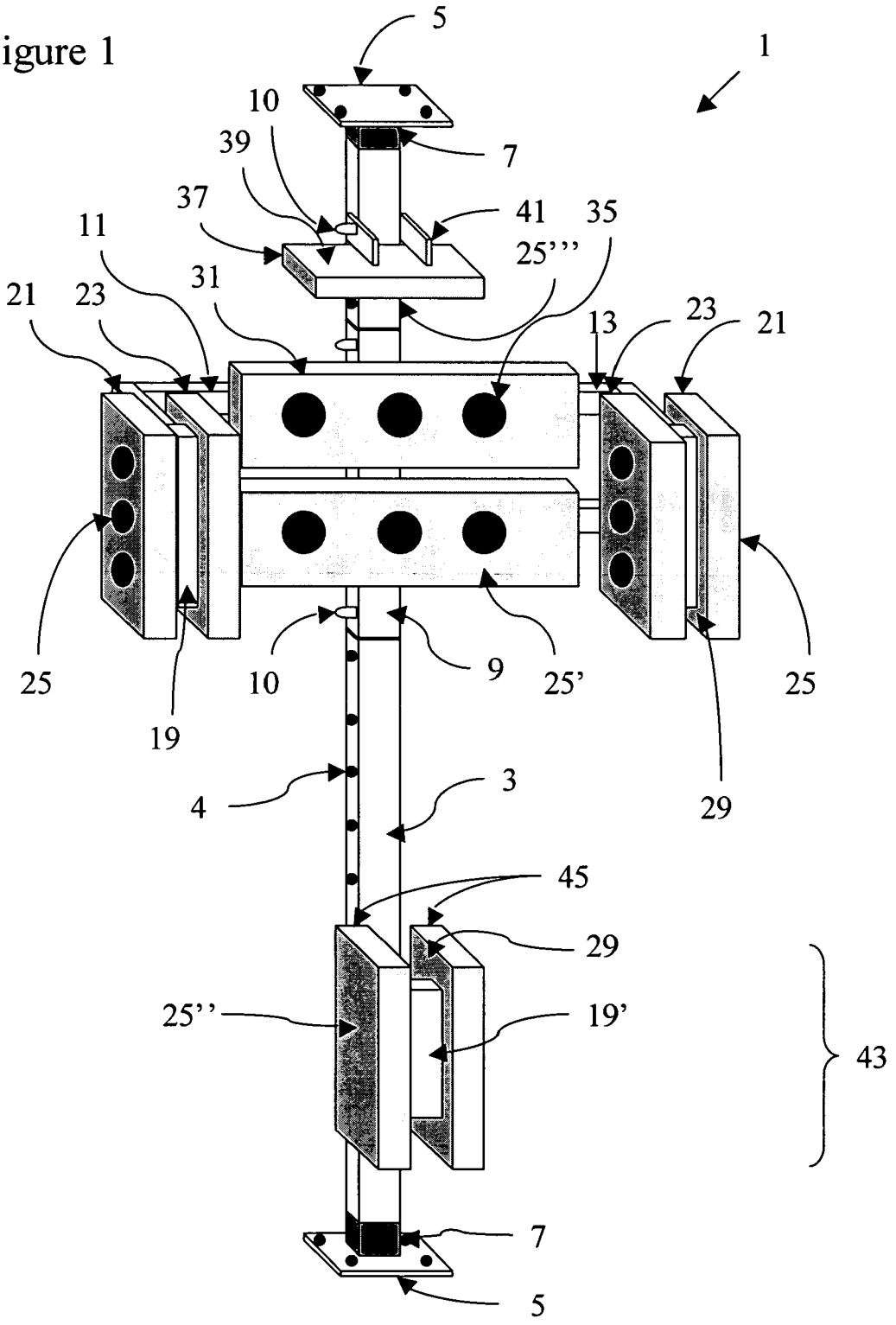
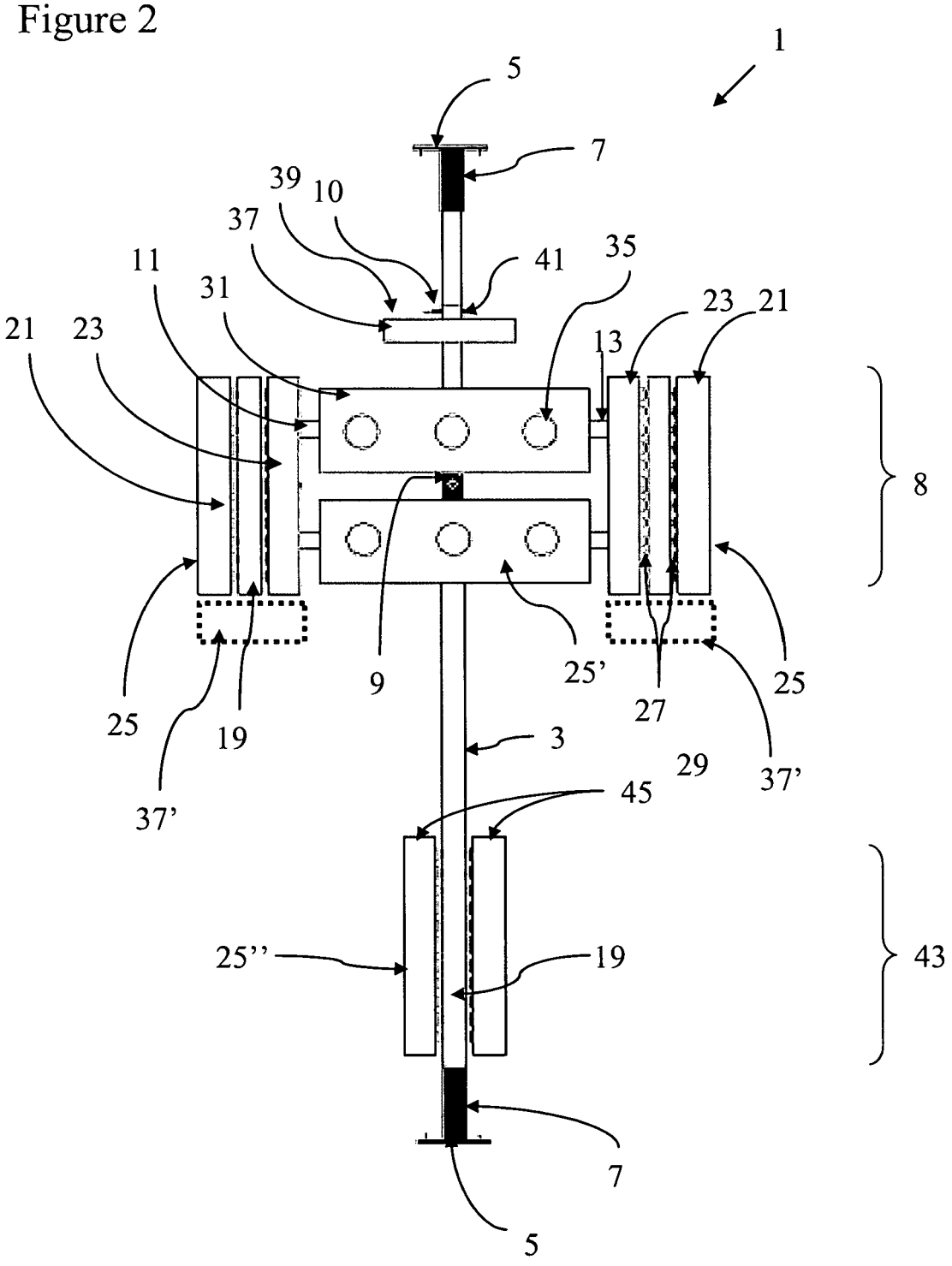

5
1
10
39
7
37
41
35
11
25'''
31
21
23
13
23
21
25
10
9
25'
25
19
4
3
29
45
29
25''
19'
43
7
5

Figure 2


1
5
7
39
10
37
41
35
11
31
23
21
21
23
13
8
9
25'
25
25
19
27
3
29
37'
37'
45
25''
19
43
7
5

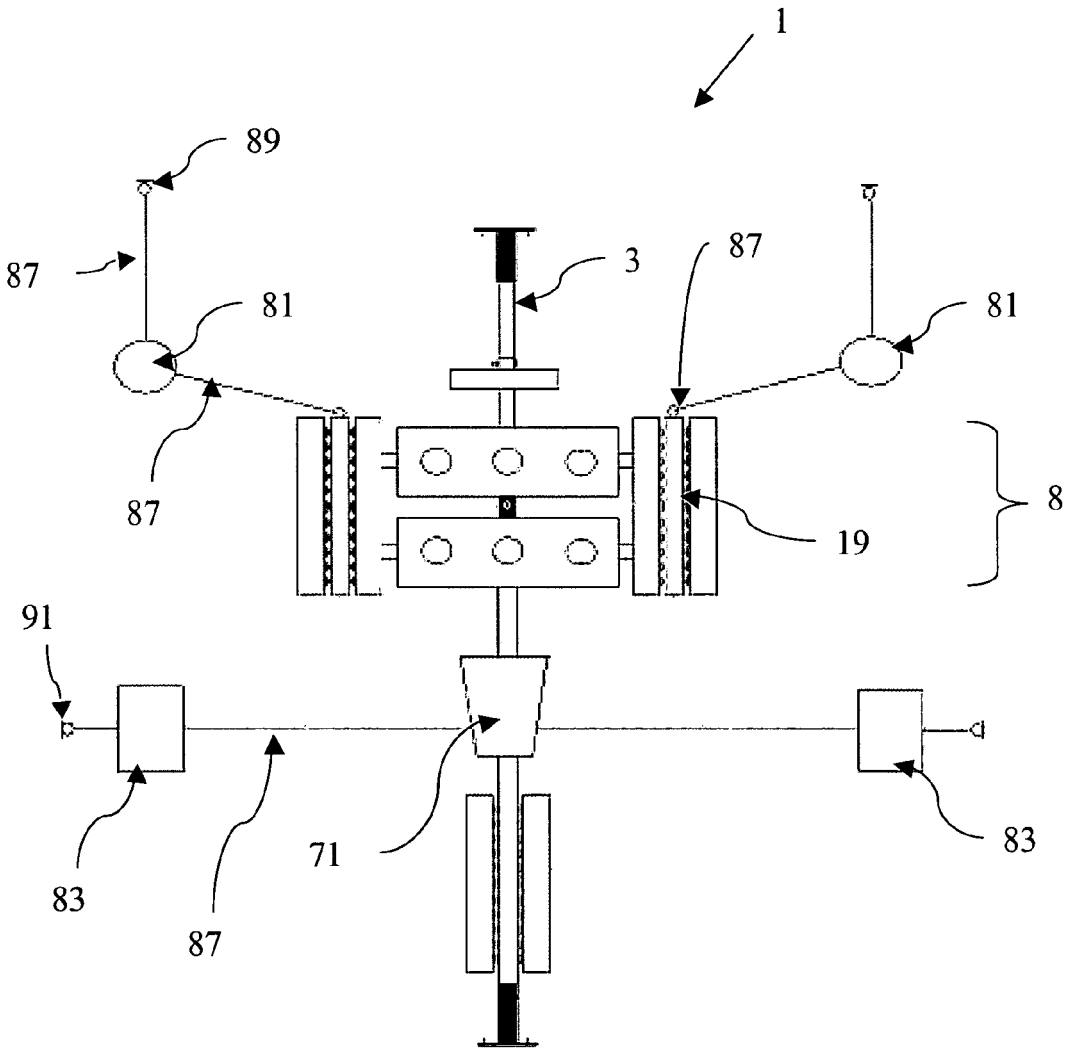


Figure 3

Figure 4A

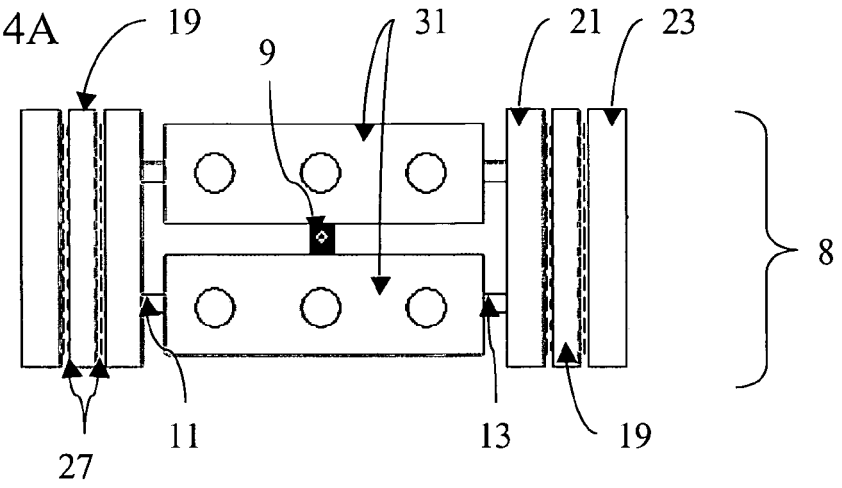
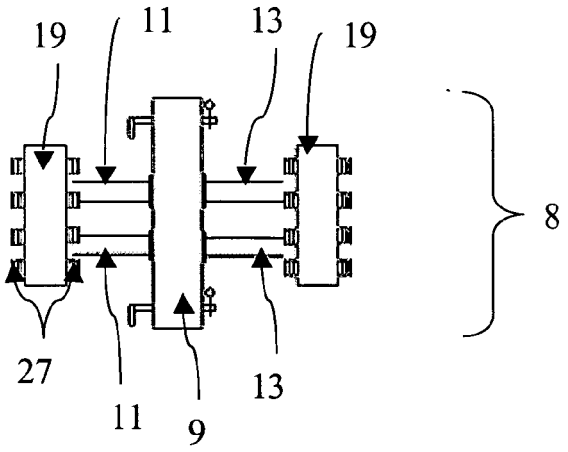


Figure 4B



83

Figure 4C

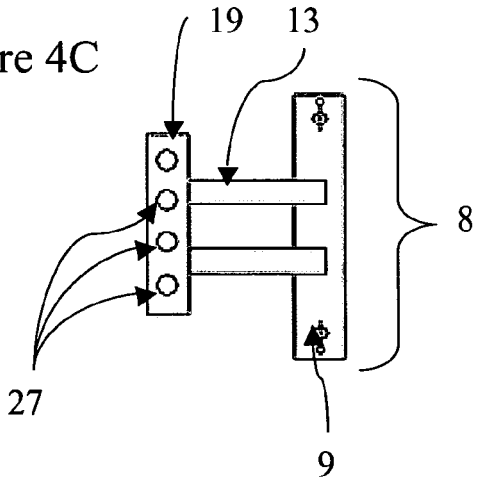


Figure 4D

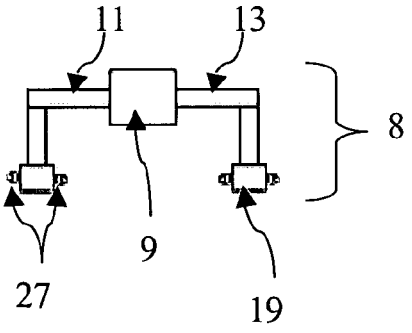


Figure 5

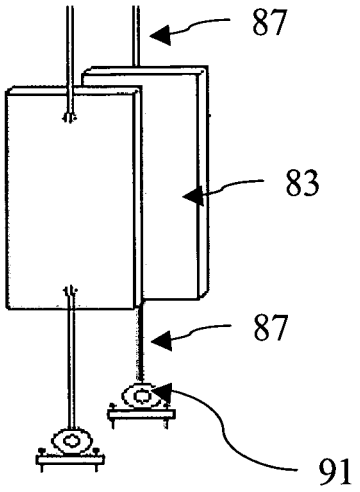
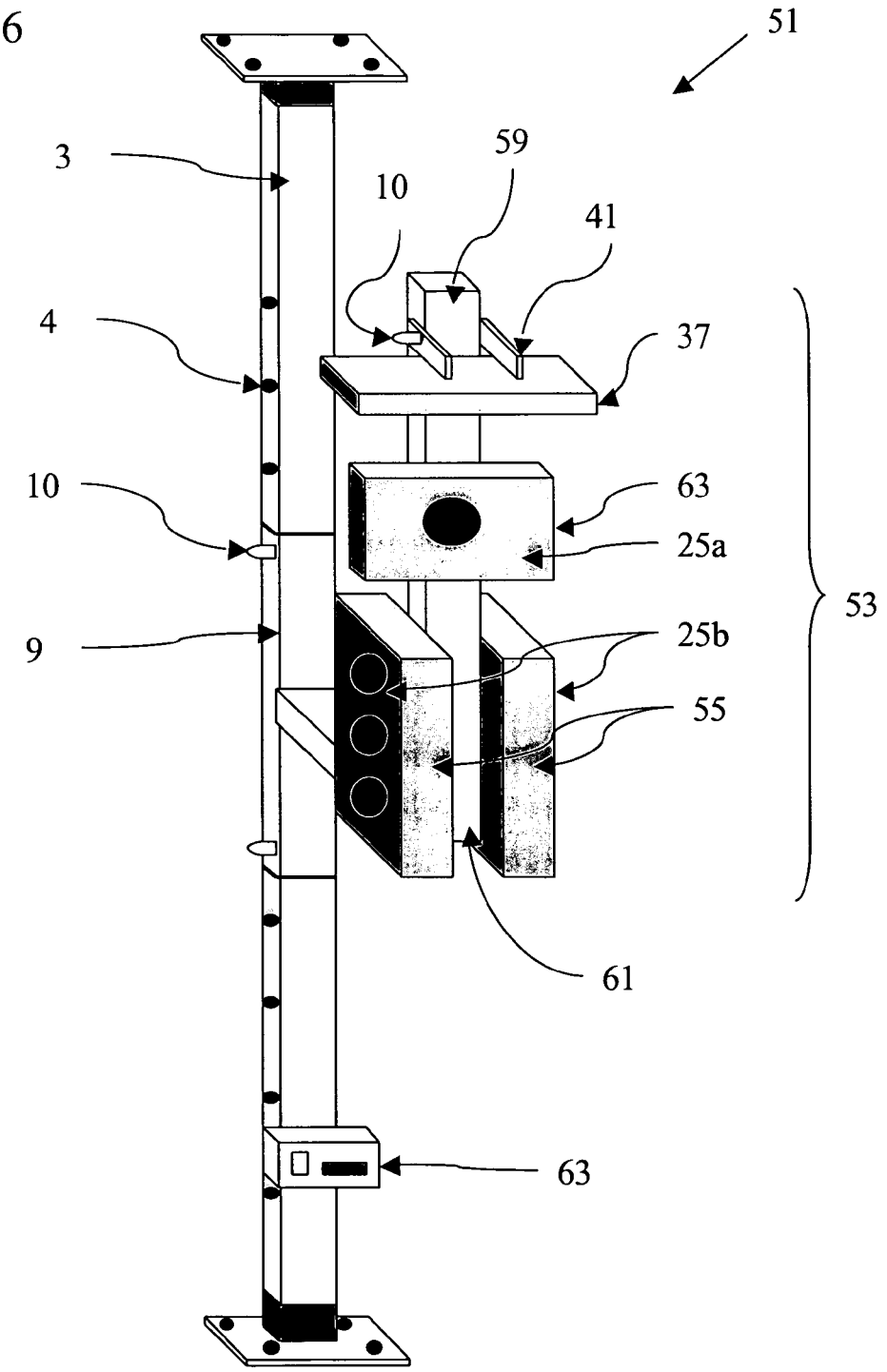


Figure 6



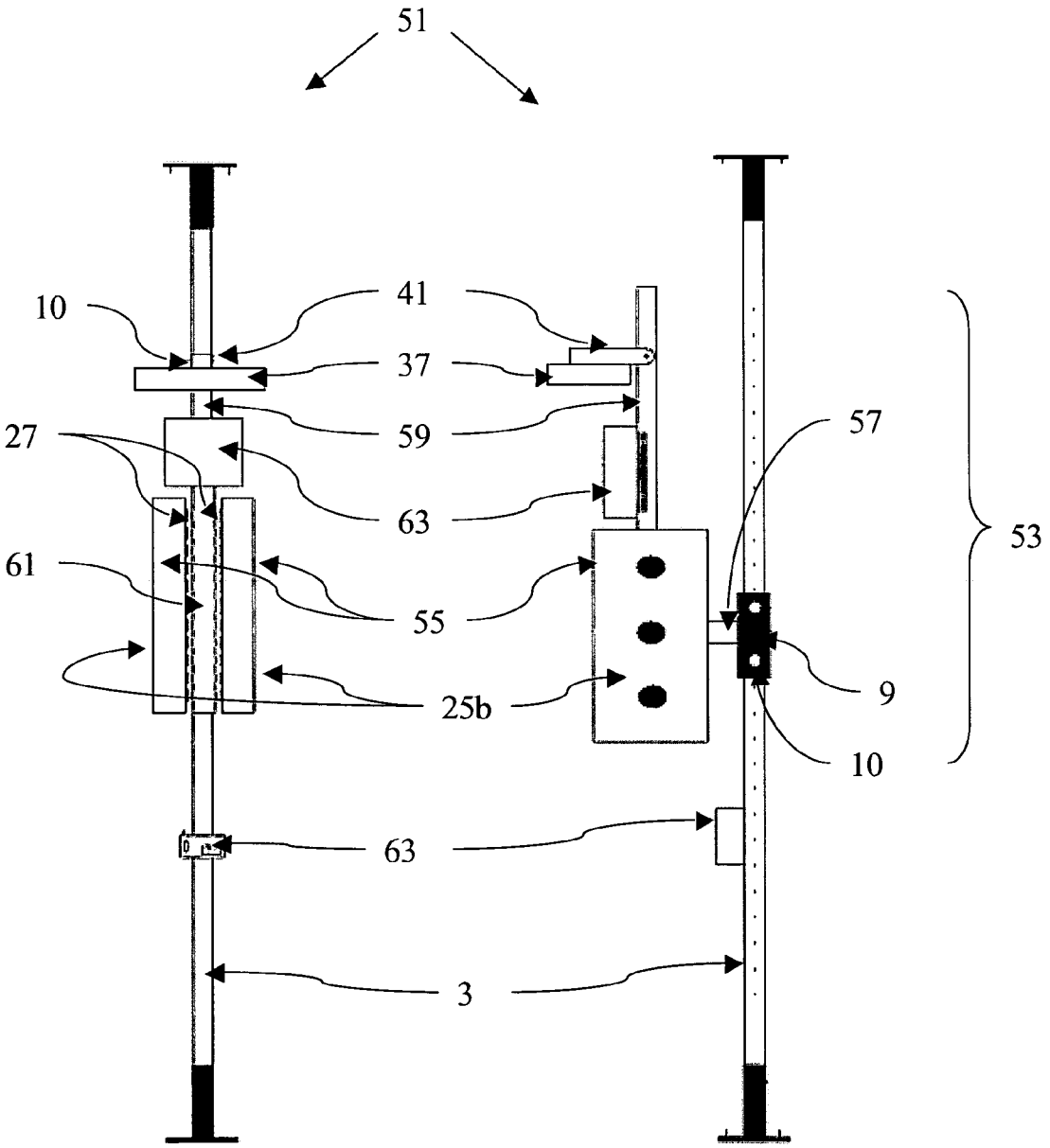


Figure 7

Figure 8

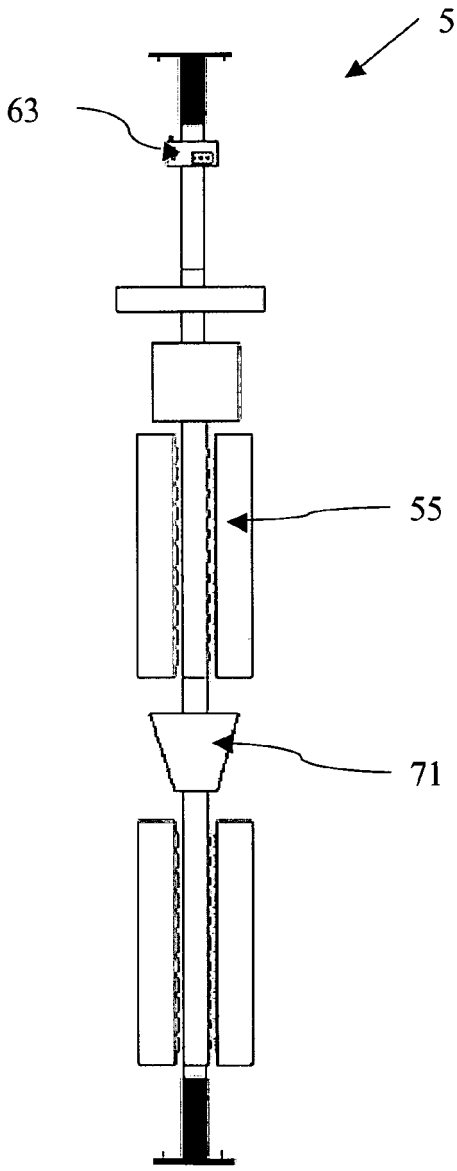


Figure 9

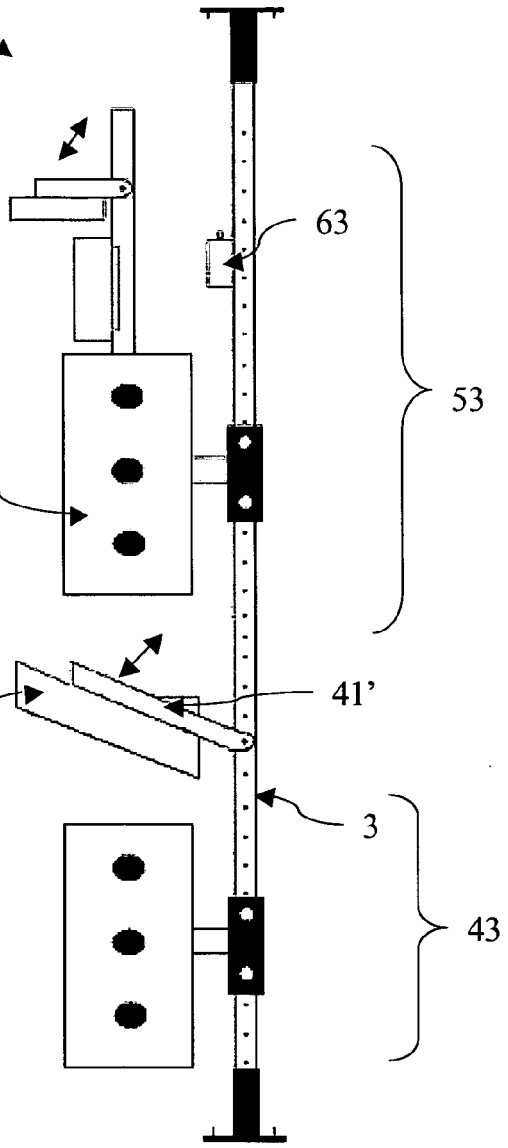


Figure 10

Figure 11A

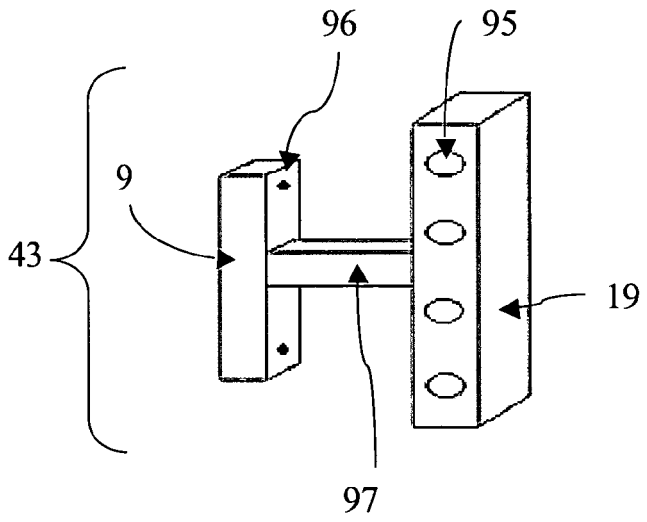


Figure 11B

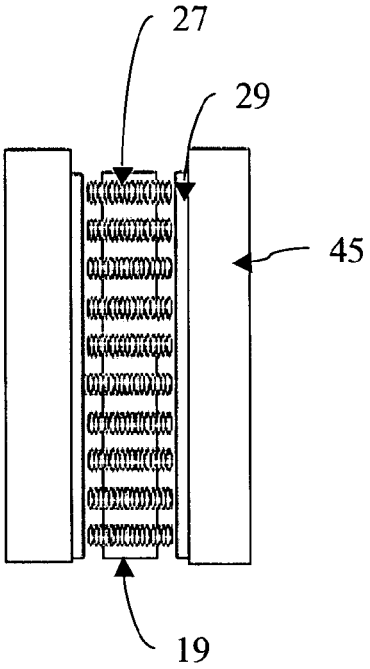


Figure 12

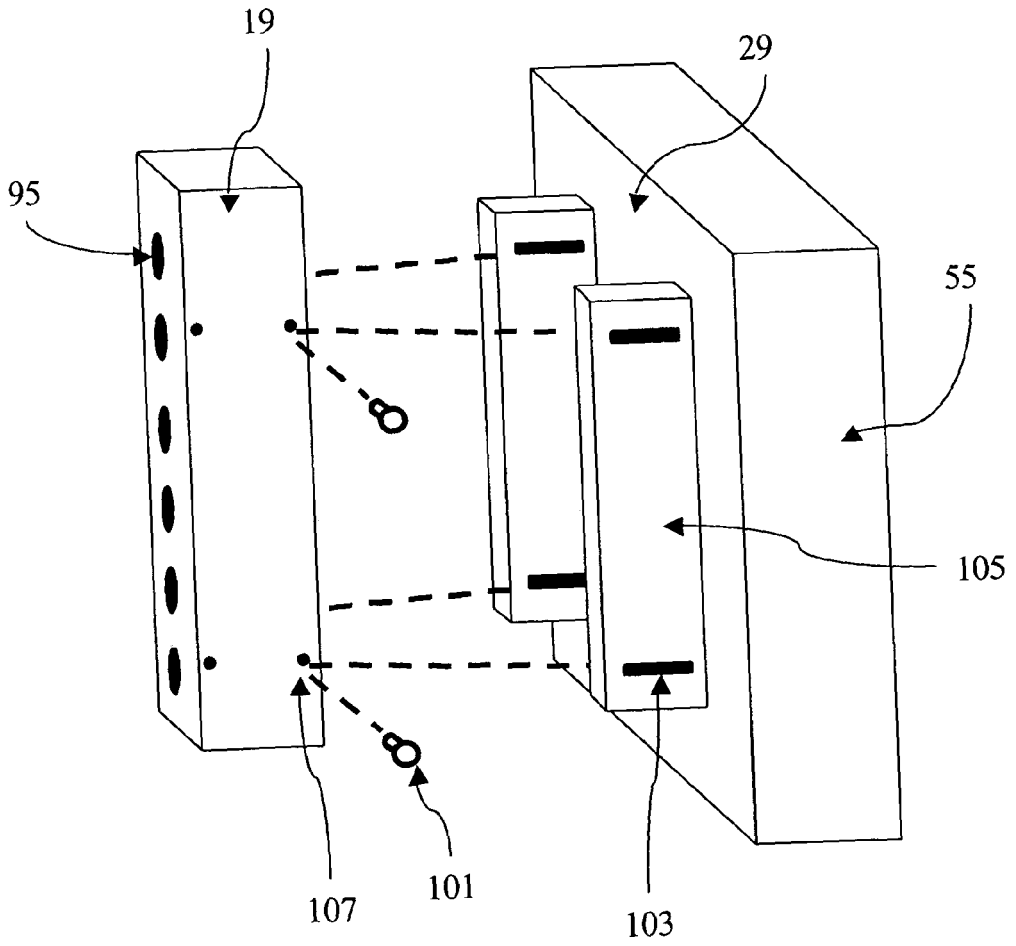


Figure 13

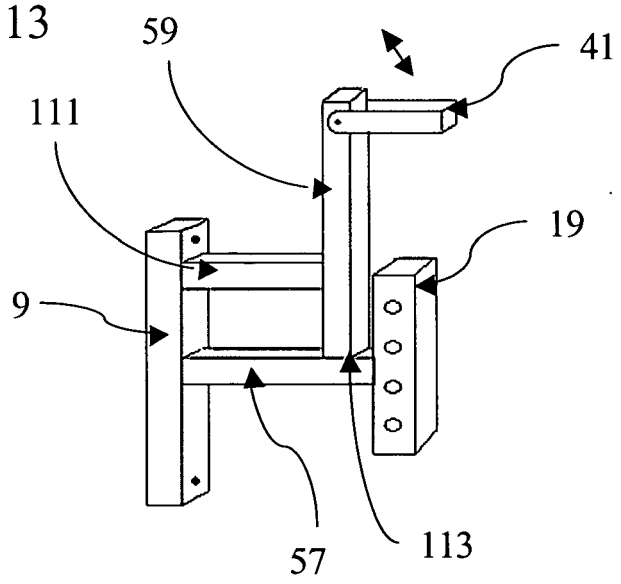


Figure 14

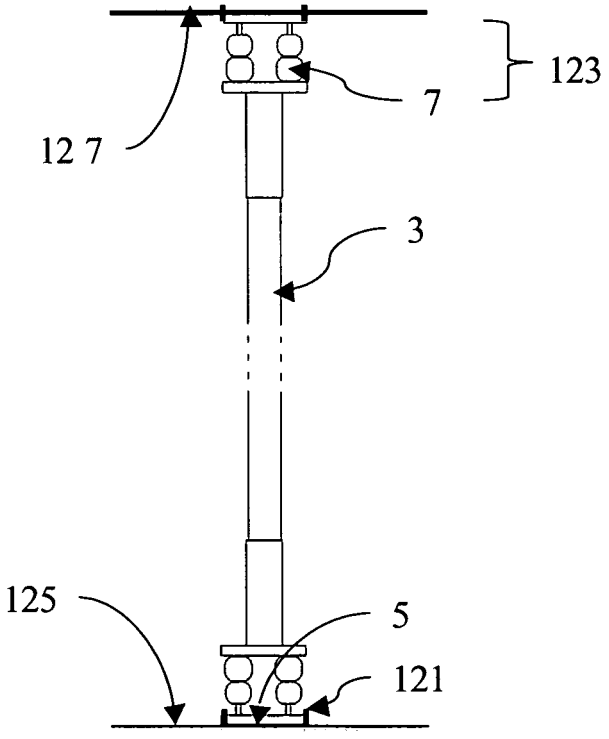


Figure 15

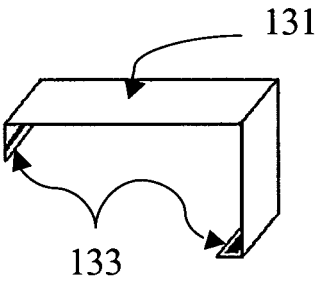


Figure 16

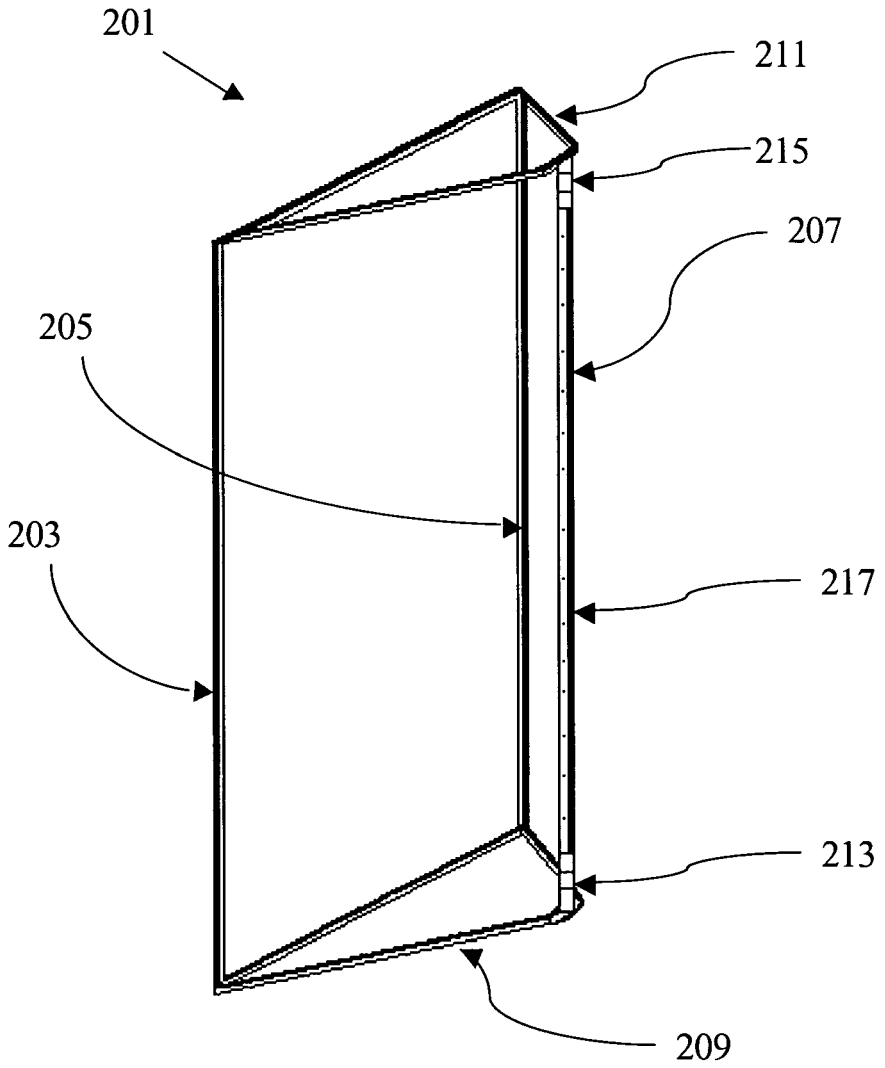


Figure 17

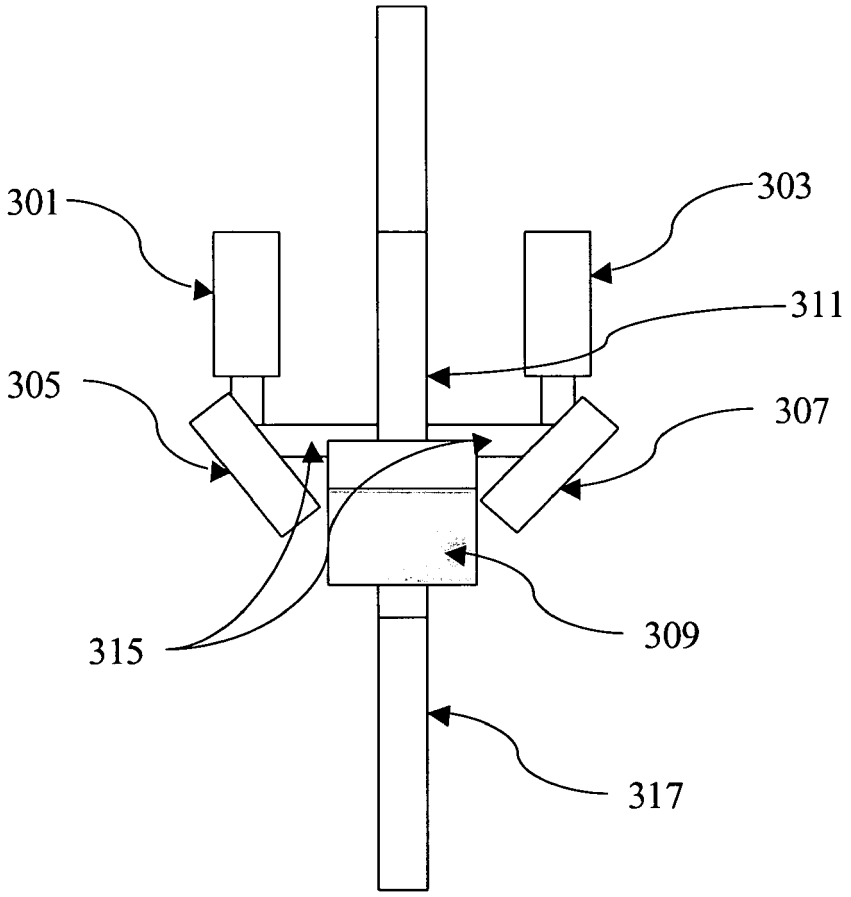
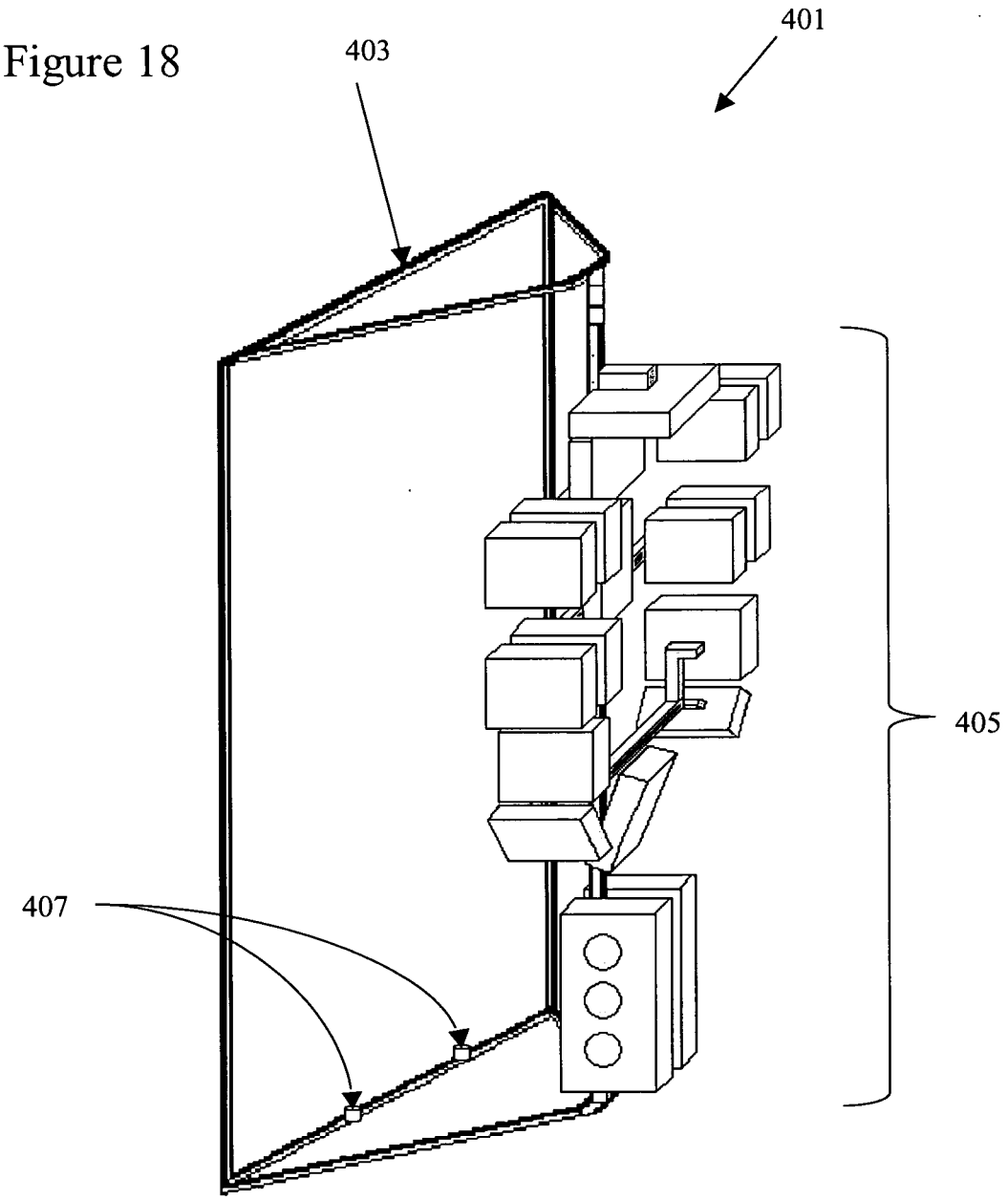


Figure 18



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 25 3038

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CA 2 173 031 A1 (BRUCE KELVIN [CA]) 30 September 1997 (1997-09-30) * page 1 - page 6; figures 1-8 *	1-28	INV. A63B69/20
X	WO 97/29813 A (CHI IN DEOK [KR]) 21 August 1997 (1997-08-21) * page 2, line 18 - page 18, line 17; figures 1-20 *	1-28	
X	WO 2005/089889 A (URIZZI ALESSANDRO MANTHOS PANA [ZA]; DIEDERIKS GRAHAM ERNEST [ZA]) 29 September 2005 (2005-09-29) * page 1, line 5 - page 20, line 17; figures 1-8 *	1-28	
X	US 2005/209066 A1 (PENNEY DANIEL B [US]) 22 September 2005 (2005-09-22) * paragraph [0007] - paragraph [0048]; figures 1,2,10 *	1-28	
X	US 5 458 552 A (MARA SCOTT G [US]) 17 October 1995 (1995-10-17) * column 1, line 30 - column 3, line 34; figures 1-6 *	1-28	TECHNICAL FIELDS SEARCHED (IPC) A63B
X	US 6 280 351 B1 (WONG SEAN [CA]) 28 August 2001 (2001-08-28) * column 2, line 15 - column 6, line 35; figures 1-5 *	1-28	
X	EP 0 712 645 A (PASTOR MOYA GABRIEL [ES]; PASTOR MOYA MARIANO [ES]) 22 May 1996 (1996-05-22) * column 1, line 28 - column 2, line 30; figure 1 *	1-28	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	7 November 2007	Oelschläger, Holger

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 25 3038

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-11-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CA 2173031 A1	30-09-1997	NONE	
WO 9729813 A	21-08-1997	NONE	
WO 2005089889 A	29-09-2005	NONE	
US 2005209066 A1	22-09-2005	NONE	
US 5458552 A	17-10-1995	NONE	
US 6280351 B1	28-08-2001	CA 2382257 A1	18-10-2003
EP 0712645 A	22-05-1996	CA 2163776 A1	02-11-1995
		ES 1027796 U	16-10-1994
		WO 9528994 A1	02-11-1995

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82