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(54) **Handheld device for use during exercise**

(57) The present invention relates to a lightweight handheld device (1) for use during exercise, for example during running, comprising an elongated handgrip (2) having at least one attachment point (5), a first end (3) and a second end (4), wherein at least one of said first end (3) and said second end (4) comprises an exchange-

able plug-in unit (6) which comprises said functionality is adapted to be attached to the handgrip (2) at said attachment point (5). Furthermore, the present invention relates to a plug-in unit (6) comprising a functionality, which unit (6) is adapted to be attached to the handgrip (2) at said attachment point (5).

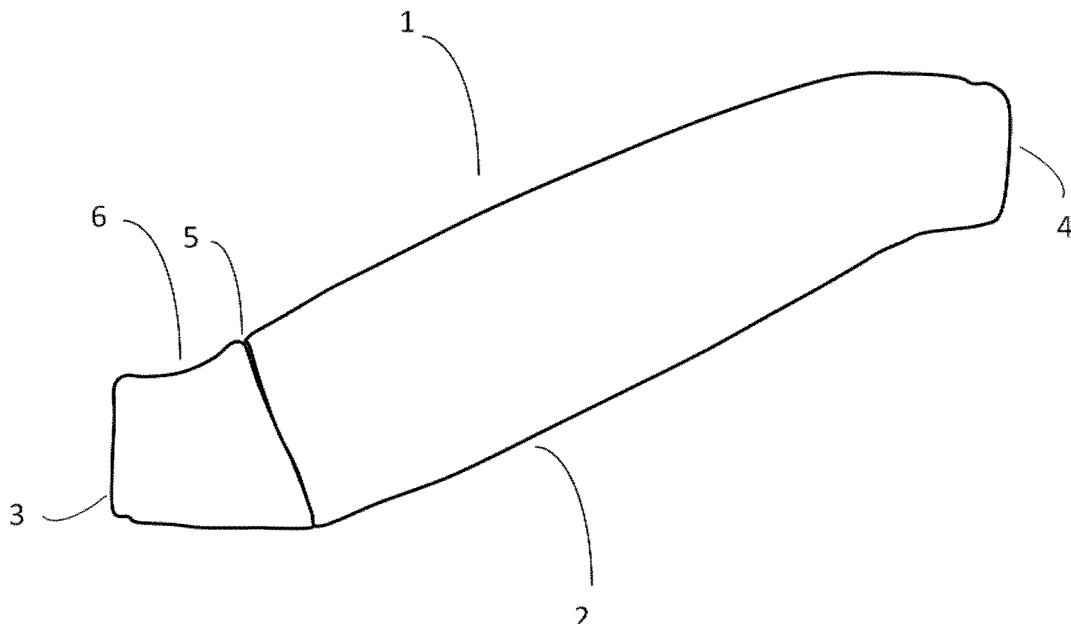


Fig. 1

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Description

Field of the invention

[0001] The present invention relates to a lightweight handheld device for use during exercise, for example during running, comprising an elongated handgrip having at least one attachment point, said device having a first end and a second end. Furthermore, the present invention also relates to a plug-in unit adapted to be attached to said attachment point.

Background of the invention

[0002] Physical exercise, in particular outdoor exercise such as running, has become increasingly popular.

[0003] A problem which is experienced by runners, in particular by distance runners, is arm fatigue. In fact, arm fatigue which has caused runners to hold their arms at their sides in lieu of the usual cocked position is held by some to be the reason for hastening exhaustion of the runner. Additionally, many runner experience a discomfortable and painful diaphragm cramp, also known as stitch, during running. Hence, many runners do not experience the joy and full physical benefits of running as their running experience is not optimal and leads them to discontinue their run.

[0004] Another problem also experienced by runners, as well as by other participants in outdoor exercise, is that it is difficult to bring things along, such as keys, money, music players, exercise monitoring devices etc., during exercise. In the prior art there are bags and backpack for runners, however these are bulky and slide up and down along the runner's body due to the motion of running, which is uncomfortable and can even cause redness or injury to the skin. Alternatively, runners may carry devices in their pocket, however the risk of the device falling out is substantial and devices in pockets move while the runner is running similarly to bags and backpacks. Runners may hold devices in their hand; however the risk dropping the device and breaking it and/or losing it is substantial. Additionally, in the prior art there are devices, such as wrist watches with pulse meters, that the runner may wear on his body, however as the known devices most often have only a one or a few functionalities the runner is still required to carry along other necessary devices in bags or pockets.

[0005] US 5,556,003 discloses a handheld personal defense apparatus and a companion exercise apparatus. The disclosed defense apparatus comprises an aerosol canister of defense fluid and a battery powered siren, while the accompanying exercise apparatus includes a stop watch and a pedometer, a flashlight and a storage compartment. US 5,556,003 further discloses that these apparatuses may be weighted to have approximately equal weight and thus, when used in combination provide additional aerobic exercise to benefit the user. Hence, the personal defense apparatus and the exercise appa-

ratus are disclosed to function as exercise weights.

[0006] Carrying hand weights during exercise such as running increases the risk of experiencing arm fatigue and may even decrease the active exercise time before arm fatigue is experienced. Also, carrying hand weights may also contribute to tension and pain in the arm, shoulder and neck muscles.

Summary of the invention

[0007] In view of the above mentioned and other drawbacks of the prior art, an object of the present invention is to provide a device which improves exercise experience, in particular running experience. Another object of the invention is to provide a device that counteracts arm fatigue and stitch during exercise. Another object of the present invention is to allow the exerciser to carry along devices of his or her choice in a comfortable way.

[0008] These and other objects of the invention will be apparent from the following summary and description and are achieved by a lightweight handheld device according to the appended claims.

[0009] According to a first aspect of the present invention, there is provided a lightweight handheld device for use during exercise, the device comprising an elongated handgrip having at least one attachment point, the device comprising a first end and a second end, wherein at least one of the first end and the second end comprises a detachable plug-in unit, which unit comprises a functionality and is adapted to be attached to the handgrip at the attachment point.

[0010] It is advantageous for the at least one plug-in unit to be detachable and therefore exchangeable, so that the runner may adapt the handheld device to his or her current exercise needs.

[0011] It has been experienced by many, that holding a device in your hand while running may decrease the discomfort and pain associated with diaphragm cramps, however carrying devices during exercise may be strainious. Therefore, it is also advantageous for the handgrip to be adapted for ergonomical and comfortable hold, allowing the exerciser to avoid undesired muscle tension and pain during exercise.

[0012] Furthermore, it is advantageous for the handheld device to be of little weight as to avoid repetitive stress injury from carrying a device of substantial weight. A lightweight device also decreases the risk of experiencing arm fatigue and may even contribute to the user increasing the time he or she spends exercising. Hence, the light weight of the handgrip is advantageous in order to prevent or decrease arm fatigue and undesired tension of and pain in arm, shoulder and neck muscles as well as diaphragm cramps.

[0013] As used herein, the term "lightweight" refers to a weight of less than 250 g.

[0014] In one embodiment of the present invention, there is provided a handheld device, wherein the weight of said device is less than 250 g, preferably less than 200

g, more preferably less than 150 g and most preferably less than 100 g.

[0015] In another embodiment of the present invention, there is provided a handheld device, wherein the weight of said device is less than 250 g, such as less than 225 g, preferably less than 200 g. In other preferred embodiments the weight of said device is less than 175 g; less than 150 g; less than 125 g; less than 100 g; less than 75 g; less than 60 g or less than 50 g.

[0016] In one embodiment of the present invention, the handgrip is partially hollow, such that it fits part of or the entire plug-in unit inside the handgrip. For example, the handgrip may be hollow at one of the said first and second ends, such as hollow at the end where to the plug-in unit is adapted to be attached.

[0017] In one embodiment of the present invention there is provided a handheld device, wherein the at least one functionality is selected from the group comprising storage means, alarm means, timing means, exercise monitoring means, illuminating means, navigation means, communication means and entertainment means.

[0018] As used herein, the term "storage means" includes for example storage containers, storage boxes, storage bags or any suitable object that can be used to hold things.

[0019] As used herein, the term "alarm means" includes for example audible alarms, visual alarms and silent alarms, for example an alarm transmitted wirelessly to a central dispatch location for security provision.

[0020] As used herein, the term "timing means" includes for example timers, stop watches and clocks.

[0021] As used herein, the term "exercise monitoring means" includes for example pedometers, pulse meters, heart rate monitors, distance monitors, duration monitors and calorie meters for counting the number of calories burned.

[0022] As used herein, the term "illuminating means" includes for example flashlights, incandescent lamps, halogen lamps, non-incandescent lamps, gas discharge lamps (such as fluorescent lamps, compact fluorescent lamps (CFL), cold cathode fluorescent lamps (CCFL)) high-intensity discharge lamps, chemoluminescent lamps and electroluminescent (EL) lamps for example light-emitting diodes (LEDs).

[0023] As used herein, the term "navigation means" includes for example navigators, GPS, altitude monitors, compasses for example magnetic, dry, bearing and liquid compasses.

[0024] As used herein, the term "communication means" includes for example mobile communication, such as Global System for Mobile Communications (GSM) for example EDGE (Enhanced Data rates for GSM Evolution) referred as EGPRS, third generation (3G) UMTS standard, fourth generation (4G) LTE Advanced standards and other suitable systems.

[0025] As used herein, the term "entertainment means" includes for example digital audio players for playing pre-

recorded sound material, receivers and audio players of digital and/or analog radio signals as well as internet based audio streaming services, such as podcasts, and registered user based streaming services, such as for example Spotify.

[0026] In one embodiment of the present invention there is provided a handheld device, with a storage means comprising a storage container. It may be advantageous that the storage means comprises a container within the plug-in unit, such that the container fits for example money or keys. In particular embodiments said container may be adapted to fit a desired item, for example medicine, such as asthma medicine.

[0027] It may be advantageous to counterbalance the weight of a functionality in order to provide handheld devices of substantially the same weight for the left and the right hand, therefore it may be advantageous to provide small weights which fit inside said storage means. Hence, in one embodiment, said storage means comprises a weight adapted to counterbalance a functionality.

[0028] In another embodiment, said storage means is of a weight which is substantially equal to a functionality.

[0029] There are many situations in which personal safety of an individual is at risk from an attacker. Exercisers, for example walkers, hikers, joggers and runners, are often victims of violent attack such a robbery, molestation, rape and assault crimes. Making the surrounding environment aware of a threat of an attack or an undergoing attack often results in the attacker interrupting the attack and attracts help and attention from peers. Therefore, it may be advantageous that the functionality comprises alarm means.

[0030] In one embodiment of the present invention, there is provided a handheld device, with an alarm means comprising an audible alarm. An audible alarm may emit a loud siren-like alarming sound to attract attention in order to scare off an assailant. The sound emitted can also have the effect of distracting, disorienting, or surprising the assailant.

[0031] In an alternative embodiment, the alarm may additionally send information by wireless communication to a police station, security company or the similar. This is advantageous as this way authorities are immediately informed about an undergoing attack.

[0032] It is advantageous that the alarm may be activated by a simple hand motion as during an attack there may be no time to perform complicated operations.

[0033] In one embodiment of the present invention, there is provided a handheld device, with an alarm means, wherein the alarm means is adapted to be activated when a pin is detached from its attachment point in the plug-in unit comprising the alarm. In one embodiment one end of said pin comprises a micro-USB. When the micro-USB is disconnected from its micro-USB port said alarm is activated. In an alternative embodiment, said pin is attached by mechanical snap function, such that said attachment is broken upon pulling said pin whereby said alarm is activated.

[0034] Further, the assailant may grab hold of the victim and prevent the victim from actuating the audible alarm by a two hand motion.

[0035] In one embodiment of the present invention, the alarm means is adapted to be activated by releasing hold of the handheld device. This may be achieved by a wristband attached to the pin comprising the alarm. When the handheld device is released from the user's hand, the wristband pulls on the pin, whereby said pin is detached from its attachment point and thereby the alarm is activated.

[0036] Hence, in one embodiment of the present invention, there provided is an alarm means, wherein said alarm means comprises a pin attached to a wrist band.

[0037] In one alternative embodiment, the alarm means may be actuated by pulling on said plug-in unit.

[0038] In one alternative embodiment, the alarm means may be actuated by twisting said plug-in unit around the longitudinal axis of the handheld device.

[0039] In an alternative embodiment, the alarm means may be actuated by pushing the plug-in unit in the direction of the attachment point. This may be achieved by exerting a force on the plug-in unit, for example by hitting it against the ground, a structure such as a building, a rock or a tree or against the body of the victim or the assailant.

[0040] In yet another alternative embodiment of the present invention, the alarm means may be actuated by releasing hold of the handheld device. This may be achieved by a wristband attached to the plug-in unit comprising the alarm. When the handheld device is released from the user's hand, the wristband pulls on the plug-in unit and activates the alarm.

[0041] In an alternative embodiment, the alarm means may comprise a visual alarm, such as a blinking or flashing light or other suitable visual alarm.

[0042] In yet another alternative embodiment, the alarm means may comprise both a visual and an audible alarm.

[0043] In yet another embodiment, the alarm means may further comprise a silent alarm, for example an alarm transmitted wirelessly to a central dispatch location for security provision.

[0044] In yet another embodiment, the alarm means may comprise a dog repellent, such as an ultrasonic dog repellent. For example the ultrasonic dog repellent may be an electronic dog repellent or a whistle, such as a dog whistle (also known as silent whistle or Galton's whistle).

[0045] In an alternative embodiment, the alarm means may comprise an aerosol canister of a defense fluid, such as tear gas, MACE® or pepper spray.

[0046] In one alternative embodiment of the present invention, there is provided a handheld device, wherein said handheld device comprises at least two alarm means selected from the group comprising audible alarms, visual alarms, silent alarms, dog repellents and aerosol canisters of defense fluid.

[0047] In one embodiment of the present invention

there is provided a handheld device, with a timing means which comprises a stop watch. The timing means may be used for recording time information related to the exercise. In another embodiment, the timing means comprises a timer or a combined stop watch and timer. In yet another embodiment, the timing means comprises a display for digitally displaying the recorded information.

[0048] Many exercisers prefer to be able to monitor their exercise for example in terms of heart rate, pulse, number of steps taken and the number of calories burned.

[0049] In one embodiment of the present invention, there is provided a handheld device, with an exercise monitoring means, which comprises a pedometer. In one embodiment, the pedometer records at least one of the following: the number of steps taken, the duration of the exercise and the number of calories burned.

[0050] In one embodiment of the present invention there is provided a handheld device, with an exercise monitoring means comprising a pulse meter.

[0051] In one embodiment of the present invention there is provided a handheld device, with an illuminating means, for example comprising a flashlight.

[0052] In one embodiment, the power required by the illuminating means is supplied by a power supply within the plug-in unit.

[0053] In one embodiment of the present invention there is provided a handheld device, with a navigation means, for example comprising global positioning system (GPS). In one embodiment, said navigation means may provide means for monitoring the distance of the exercise. In other embodiments, the navigation means may be adapted to provide information about the runner's location.

[0054] It is advantageous that the navigation means further comprises a display for displaying recorded information and/or information about upcoming terrain and/or a map.

[0055] In one embodiment of the present invention there is provided a handheld device, with communications means, for example comprising Global System for Mobile Communications (GSM).

[0056] In one embodiment of the present invention there is provided a handheld device, with an entertainment means, for example comprising a digital audio player, such as a player of prerecorded sound material or of analog or digital radio broadcasts or of internet based audio streams, such as podcasts, and registered user based streams such as for example Spotify.

[0057] In one embodiment, the entertainment means further comprise wireless headphones.

[0058] In one embodiment of the present invention, there is provided a handheld device further comprising a power supply. For example, said power supply may be a supply of electrical power or compressed gas.

[0059] It may be advantageous that the plug-in unit further comprises a power supply such as batteries, for example exchangeable batteries or rechargeable batteries or a means for supplying power to and thereby charging

rechargeable batteries built into the plug-in unit.

[0060] Therefore, in one embodiment of the present invention, there is provided a handheld device, wherein the plug-in unit further comprises a power supply.

[0061] In an exemplary embodiment, the power supply comprises batteries, such as exchangeable batteries or rechargeable batteries.

[0062] In one embodiment the plug-in unit comprising rechargeable batteries is adapted to be recharged by plugging said plug-in unit into a charger plugged into a power source, such as a power outlet or a power supplying device. For example, the plug-in unit comprising rechargeable batteries may be recharged by plugging it into a computer unit, such as a stationary computer, laptop or tablet computer, mobile phone or other suitable device.

[0063] It may be advantageous for the user to be able to retrieve the information stored on the plug-in unit and display said information on the computer screen in order to monitor his or her exercise results by connecting the handheld device to a computer unit or a mobile phone. Furthermore, it may be advantageous for the user to be able to change setting and/or features or downloading data to the plug-in unit related to the functionality of the plug-in unit by the means of his or her computer. Therefore, it may be advantageous that the handheld device comprises at least one data communication port.

[0064] In one embodiment of the present invention, there is provided a handheld device, wherein the plug-in unit comprises at least one data communication port.

[0065] In one embodiment, said data communication port is selected from the group comprising Universal Serial Bus (USB) ports, mini-USB ports, micro-USB ports, USB On-The-Go ports.

[0066] In one embodiment of the present invention, there is provided a handheld device, wherein the plug-in unit comprises more than one functionality.

[0067] In one embodiment of the present invention, there is provided a handheld device, wherein the plug-in unit comprises at least two functionalities selected from pulse meter, GPS, GSM and audible alarm. For example, in one embodiment the plug-in unit comprises pulse meter, GPS, GSM and audible alarm. In another embodiment, the plug-in unit comprises pulse meter, GPS and audible alarm. In yet another embodiment, the plug-in unit comprises pulse meter and GPS.

[0068] It may be desired by the exerciser to have access to more than one functionality during his or her exercise. Therefore, it may be advantageous for the handheld device to comprise two plug-in units comprising at least two functionalities.

[0069] In one embodiment of the present invention, there is provided a handheld device, wherein the first end and the second end comprise plug-in units, each comprising at least one functionality, wherein said functionalities may be the same or different.

[0070] It is advantageous that the handheld device is secured to the hand of the exerciser so that it is not dropped accidentally.

[0071] In one embodiment, there is provided there is provided a handheld device, further comprising a wrist band. For example, said plug-in unit may be provided with an attachment point for a wristband. This may be advantageous since a wristband prevents the user from dropping the handheld device even when he or she released hold of the device.

[0072] In one embodiment of the present invention, there is provided a handheld device, further comprising a strap which extends between the attachment point of the first plug-in unit and the second end or the attachment point of the second plug in unit, when present.

[0073] A strap or wristband prevents the exerciser from accidentally dropping the device upon involuntarily or purposefully loosening his or her grip. Furthermore, it is advantageous that the strap or wristband is reflective such that it improves the ability to see the exerciser in the dark when in vicinity of a light emitting source and hence also improves safety, for example while running at the road side or in other areas with vehicle traffic.

[0074] According to a second aspect of the present invention, there is provided a plug-in unit comprising a functionality which unit is adapted to be attached to a handheld device according to the present invention.

[0075] In an embodiment of the second aspect of the present invention, there is provided a plug-in unit, wherein the functionality is defined according to the above. It is advantageous that the plug-in units are detachable and hence exchangeable such that the exerciser may adapt the handheld device to his current desires and needs. For example, a runner may choose to plug in a plug-in unit comprising exercise monitoring means for a day time run in a familiar area and choose alarm means for an evening run in a park.

Brief description of the drawings

[0076] These and other aspects of the invention will now be described in further detail, with reference to the appended drawings, wherein:

Fig 1 is a plan view of the handheld device according to an embodiment of the present invention.

Fig 2 is a plan view of the handheld device according to an embodiment of the present invention.

Fig 3a and 3b are plan views of the handheld device according to an embodiment of the present invention.

Fig 4 is a schematic view of the plug-in unit according to an embodiment of the present invention.

Detailed description of embodiments of the invention

[0077] In the following description, an embodiment of the present invention is described with reference to the handheld device 1.

[0078] Fig 1 is a plan view of the handheld device 1. The handheld device 1 comprises an elongated handgrip

2 made out of light weight material that is comfortable to hold. The handgrip may comprise a hollow, or partially hollow, casing or a solid elongated rod or the like. In one example embodiment, the handgrip 2 is a partially hollow at one end, such that it fits part 8 of the plug-in unit 6 or all of the plug-in unit 6 inside the handgrip (see Fig 4). In one example embodiment, the plug-in unit 6 is adapted to be able to rotate 180° when attached to the handgrip 2. The shape of the cross section of the handgrip 2 may be circular, oval, hexagonal, octagonal or any other suitable shape which enables an ergonomical hold. It may be advantageous that the handgrip 2 is adapted to be left or right hand specific. It may further be advantageous that the size of the handgrip 2 is adapted to different hand sizes. It may be advantageous that the handgrip 2 comprises a softer section in the vicinity of the second end 3 adapted for comfortable positioning of the thumb.

[0079] In one embodiment, the shape of the cross section is hexagonal with rounded corners and with two parallel sides longer than then remaining four sides.

[0080] In some embodiments it may be advantageous for the handgrip 2 to comprise an inner section made of plastic, composite material or other suitable material. Furthermore, the handgrip 2 may comprise an outer housing adapted to at least partially cover said handgrip 2. The outer housing may be made from a rubber material or neoprene. However, other choices of material are also possible.

[0081] In some embodiments it may be advantageous that the outer surface of the handgrip 2 has anti-bacterial properties and or anti-fungal properties. For example, said outer surface may be treated with silver ions or silver nanoparticles.

[0082] It may further be advantageous that the material comprising the handgrip 2 is cleanable and/or washable. Additionally, it may be advantageous that said material is at least partially water resistant, such as completely water resistant or waterproof.

[0083] Furthermore, it may in some embodiments be advantageous that the handgrip 2 further comprises a detector device, such as a plate made from metal, composite material or other suitable material, for use in exercise monitoring such as monitoring of pulse or heart rate. For example, it may be advantageous in some embodiments the outer housing of the handgrip 2 comprises the detector or that said detector device is located between the outer housing and the inner section of said handgrip 2. In another embodiment, it may be advantageous that the inner section of the handgrip 2 to comprise the detector.

[0084] Additionally, it may in some embodiments be advantageous that the handgrip 2 further comprises at least one actuator, which actuator is mechanically coupled to the plug-in unit 6 comprising a functionality, such that said functionality can be regulated by said actuator. In one example embodiment, pressing said actuator may mechanically transmit the action to a corresponding actuator within the plug-in unit 6, such that the functionality

of the plug-in unit 6 is regulated.

[0085] In one embodiment, said actuator is adapted to simultaneously regulate all functionalities comprised in the plug-in unit 6.

[0086] In an alternative embodiment, the handgrip 2 may comprise at least one actuator, for example 2, 3, 4 or 5, adapted to regulate different functionalities or different aspects of a functionality comprised in the plug-in unit 6.

[0087] In yet another exemplary embodiment, the plug-in unit 6 may comprise an actuator, for example a button or other suitable actuator means.

[0088] In the illustrated embodiment, the handheld device curves at two points located in the vicinity of opposite ends 3 and 4 to provide a comfortable hold and prevent the handheld device 1 from slipping in or from the user's hand. However, other shapes, for example with flanges or endplates of significantly larger diameter compared to the handgrip 2, may be suitable.

[0089] In the illustrated embodiment, a plug-in unit 6 comprising a functionality is located at the first end 3 of the handheld device 1. The plug-in unit 6 is attached to the handgrip 2 through an attachment point 5. The means of attaching the plug-in unit 6 to the attachment point 5 may be mechanical, such as twisting or screwing, clicking-in means (such as comprising a notch and a receiver), friction based means or magnetic means or other suitable means. In some embodiments, the plug-in unit 6 may be adapted to be attached to the handgrip 2 by pressing the plug-in unit 6 into the attachment point 5 such that the plug-in unit 6 is attached at the attachment point by mechanical means. In some embodiments the plug-in unit 6 may be detached from the attachment point 5 by a slight pulling action.

[0090] The plug-in unit 6 may be repeatedly attached to and detached from the handgrip 2 by said means and therefore also exchanged for a different plug-in unit comprising a different functionality if so desired.

[0091] In some embodiments it may be advantageous that the plug-in unit 6 is at least partially comprised of plastic. It may be advantageous in some embodiments that at least part of the plug-in unit is made from metal or a composite material.

[0092] Fig 2 is a plan view of the handheld device 1. In this illustrated embodiment plug-in units 6 are provided at both the first end 3 and the second end 4 of the handheld device 1.

[0093] In some embodiments, plug in unit may be provided with an attachment point for a wristband. This may be advantageous since a wristband prevents the user from dropping the handheld device 1 even when he or she released hold of the device.

[0094] Fig 3a and 3b are plan views illustrating an embodiment of the present invention further comprising a strap 7 which extends parallel to the longitudinal axis of the handgrip 2. The strap 7 is attached to the handheld device 1 at or in the proximity of the attachment point 5 close to the first end 3 and extends to the second end 4

of the handheld device 1 as illustrated in Fig 3a. In an illustrated alternative embodiment, the strap 7 extends between the attachment point 5 close to the first end 3 and the attachment point 5 close to the second end 4 of the handheld device (Fig 3b).

[0095] The strap 7 may be stitched onto the handheld device 1, attached by adhesive means, one or more rivets or by other suitable means. It may be advantageous that the strap 7 is detachable from the handheld device 1 and may therefore be attached by a snap fastener, press stud, Velcro or other suitable means.

[0096] Furthermore, it may be advantageous that the strap 7 is made out of material with high reflective properties. In this way the user wearing the straps 7 on his or her hands becomes much more visible in the dark for observers near a light source, such as the driver of a car with its headlights on.

[0097] Fig 4 is a schematic view of a detached plug-in unit 6 which is adapted to be attached to the handgrip thought the attachment point 5. In one example embodiment, the handgrip 2 is a partially hollow at one end, such that part 8 of the plug-in unit 6 or the entire plug-in unit 6 fits inside the handgrip 2.

[0098] It may be advantageous that the plug-in unit 6 is easily attached and detached from the handgrip 2, as this allows for easily exchanging the plug-in unit 6 in order to adapt the handheld device 1 to the user's current needs and desires.

[0099] In an exemplary embodiment (not shown), the plug-in unit 6 further comprises a digital display for displaying information to the user. Such information may be related to one or more of the following: the off- or on-state of the device, battery status of the device, distance covered, speed, heart rate and pulse etc. of the user. For example information may be related to the off- or on-state of the device and battery status of the device.

[0100] In another exemplary embodiment, the plug-in unit 6 comprises a visual indicator, such as a light indicator for example a LED light, which indicates information related to the off- or on-state of the device to the user.

[0101] It may be advantageous that the handheld device may be adapted to contain medicine such as pills, asthma medicine, syringes or other which may be important for the wellbeing and health of the user. For example, people suffering from diabetes are often health conscious and exercise regularly. However, it is important for a diabetic to monitor his or her blood sugar levels during exercise. Therefore, in one example embodiment, the handgrip 2 is provided with a sensor adapted to measure the blood sugar levels, wherein the sensor is adapted to indicate blood sugar levels below a pre-set threshold limit. For example the sensor may emit an audible alarm or a visual signal to indicate blood sugar levels below the preset threshold limit. Alternatively, a compatible plug-in unit may be adapted to emit said alarm and/or display information about the measured blood sugar level of the user.

[0102] The person skilled in the art realizes that the

present invention by no means is limited to the illustrated embodiments described above. On the contrary, many modifications and variations are possible within the scope of the appended claims.

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Claims

1. A lightweight handheld device (1) for use during exercise, said device (1) comprising an elongated handgrip (2) having at least one attachment point (5), said device (1) comprising a first end (3) and a second end (4) **characterized in that** at least one of said first end (3) and said second end (4) comprises a detachable plug-in unit (6) which unit (6) comprises a functionality and is adapted to be attached to said handgrip (2) at said attachment point (5).
2. The handheld device (1) according to claim 1, wherein the weight of said device (1) is less than 250 g, preferably less than 200 g, more preferably less than 150 g and most preferably less than 100 g.
3. The handheld device (1) according to claim 1 or 2, wherein said at least one functionality is selected from the group comprising storage means, alarm means, timing means, exercise monitoring means, illuminating means, navigation means, communication means and entertainment means.
4. The handheld device (1) according to claim 3, comprising a storage means wherein said storage means comprises a storage container.
5. The handheld device (1) according to claim 3, comprising an alarm means wherein said alarm means comprises an audible alarm.
6. The handheld device (1) according to claim 5, wherein the audible alarm is adapted to be activated when a pin is detached from its attachment point.
7. The handheld device (1) according to claim 3, comprising a timing means wherein said timing means comprises a stop watch.
8. The handheld device (1) according to claim 3, comprising an exercise monitoring means wherein said exercise monitoring means comprises a pedometer.
9. The handheld device (1) according to claim 3, comprising an exercise monitoring means wherein said exercise monitoring means comprises a pulse meter.
10. The handheld device (1) according to claim 3, comprising a navigation means wherein said navigation

means comprises global positioning system (GPS).

11. The handheld device (1) according to any one of the preceding claims, wherein said plug-in unit (6) comprises more than one functionality. 5
12. The handheld device (1) according to any one of the preceding claims, wherein said plug-in unit (6) further comprises at least one data communication port. 10
13. The handheld device (1) according to any one of the preceding claims, further comprising a power supply.
14. Plug-in unit (6), which comprises a functionality and is adapted to be attached to a handheld device (1) according to any one of the preceding claims. 15
15. Plug-in unit (6) according to claim 14, wherein said functionality is as defined by any one of claims 3-11. 20

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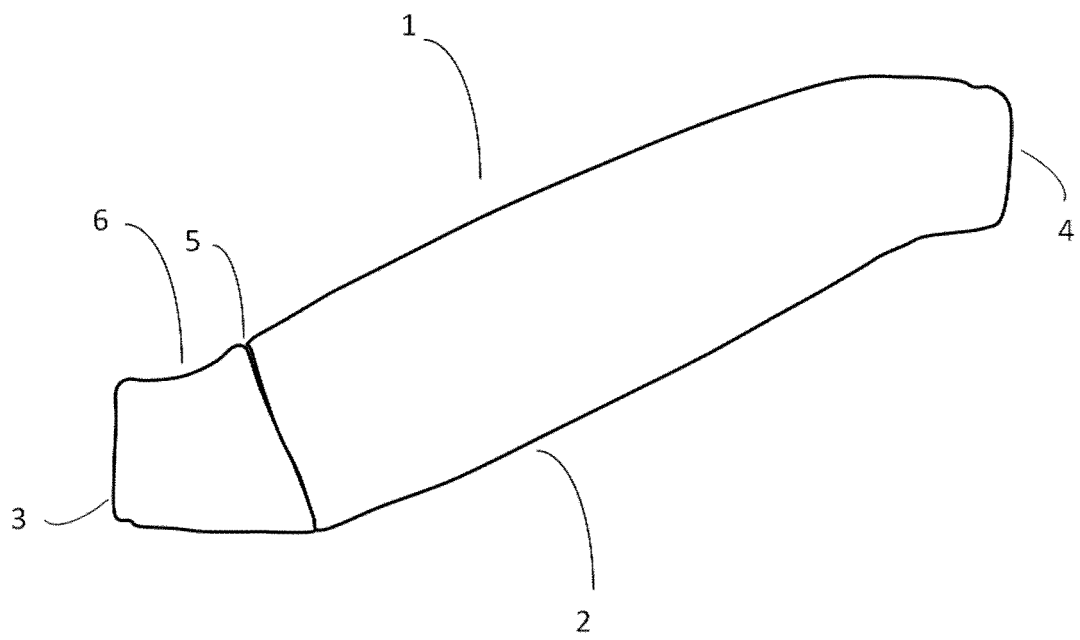


Fig. 1

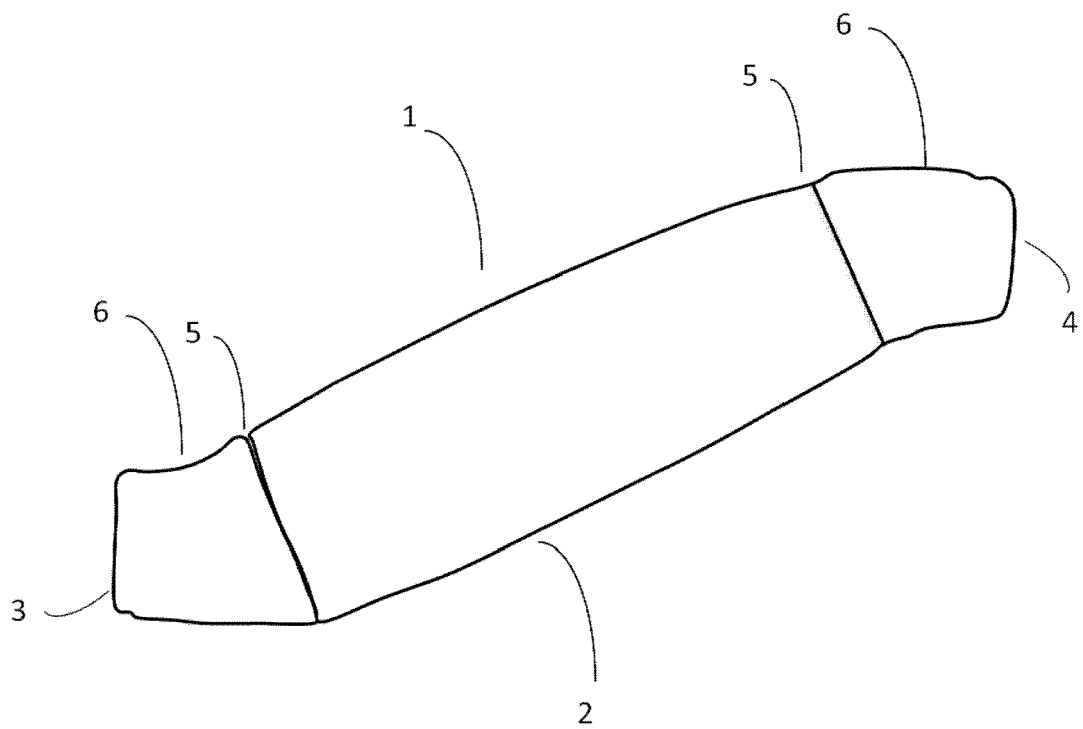


Fig. 2

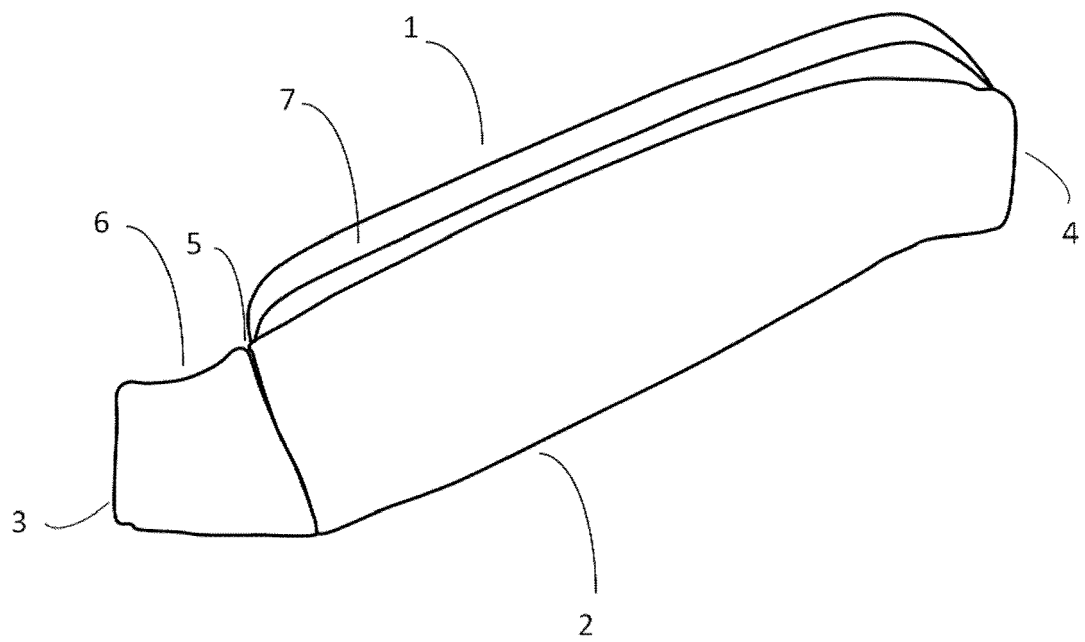


Fig. 3a

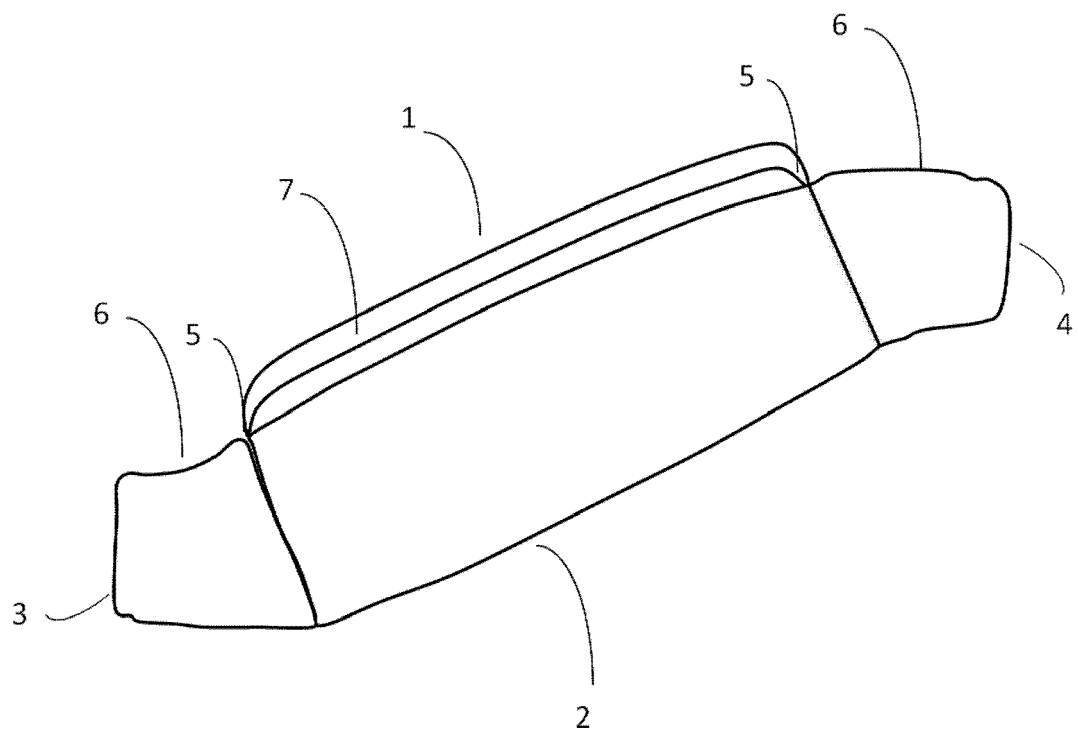


Fig. 3b

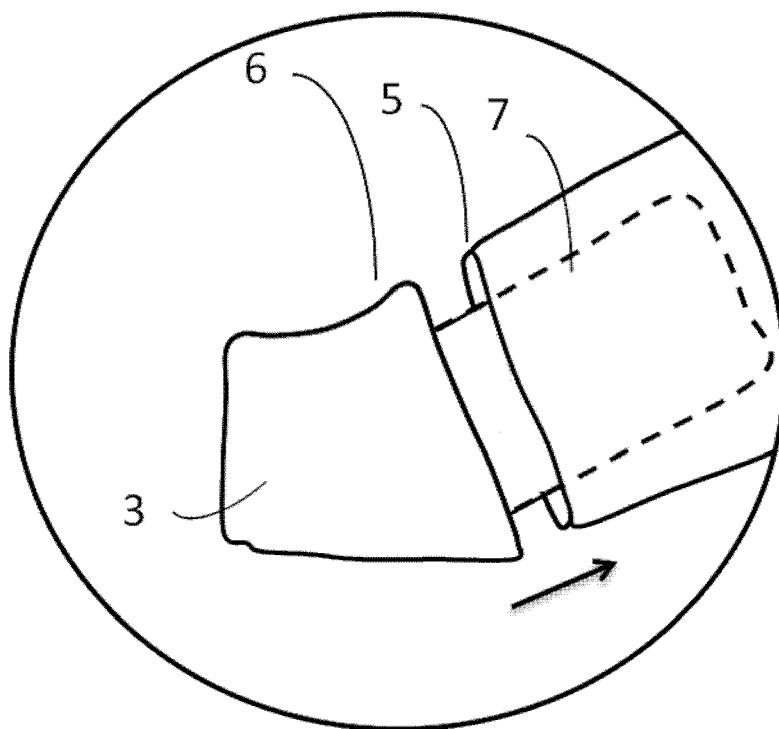


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 12 17 8275

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,D	US 5 556 003 A (JOHNSON DOUGLAS A [US] ET AL) 17 September 1996 (1996-09-17) * columns 6-10; figures * -----	1,3,4, 7-9,11, 13-15	INV. A63B69/00 A63B24/00 A63B71/06 A63B21/00
X	DE 20 2005 009895 U1 (HOCHSCHORNER K W GMBH [DE]) 13 October 2005 (2005-10-13) * paragraphs [0021] - [0024]; figures * -----	1-4, 7-11, 13-15	
X	US 5 638 767 A (BUSH IRVING M [US]) 17 June 1997 (1997-06-17) * column 3, lines 18-21 - column 4, lines 64-67 * * column 5, lines 1-9; figures 6a,6b,6c * -----	1,3,5,6, 13-15	
X	US 2008/132388 A1 (CLEM WILLIAM E [US] ET AL) 5 June 2008 (2008-06-05) * paragraphs [0007], [0040], [0053]; figures * -----	1,3,5,7, 13-15	
X	WO 2012/020882 A1 (UNIV HONGIK IND ACAD COOP FDN [KR]; DANEIL MIKESELL [KR]; KIM HYOEN-HU) 16 February 2012 (2012-02-16) * abstract; figures * -----	1,3,7, 11-15	TECHNICAL FIELDS SEARCHED (IPC) A63B
A	US 2012/120572 A1 (BENTLEY MICHAEL [US]) 17 May 2012 (2012-05-17) * paragraphs [0013], [0016]; figures * -----	1-15	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 December 2012	Examiner Teissier, Sara
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			

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EPO FORM 1503 03.82 (P04C01)

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ON EUROPEAN PATENT APPLICATION NO.**

EP 12 17 8275

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The members are as contained in the European Patent Office EDP file on
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05-12-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5556003 A	17-09-1996	NONE	
DE 202005009895 U1	13-10-2005	DE 202005009895 U1	13-10-2005
		EP 1736072 A1	27-12-2006
US 5638767 A	17-06-1997	NONE	
US 2008132388 A1	05-06-2008	EP 2089120 A2	19-08-2009
		JP 2010511480 A	15-04-2010
		KR 20090095640 A	09-09-2009
		US 2008132388 A1	05-06-2008
		US 2009131229 A1	21-05-2009
		US 2010255957 A1	07-10-2010
		WO 2008070114 A2	12-06-2008
WO 2012020882 A1	16-02-2012	KR 20120014455 A	17-02-2012
		WO 2012020882 A1	16-02-2012
US 2012120572 A1	17-05-2012	NONE	

EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 5556003 A [0005]