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(54) **Hand grip for a rollator, method for producing a hand grip and rollator**

(57) A method for adapting a rollator grip to the anatomy and the posture of a person, an adapted rollator grip and a rollator having an adapted rollator grip is described. The method includes arranging a hand of the first person on a first material used for the rollator grip; and modelling the first material to adapt the first material to the individual anatomy and the ergonomic posture of the first person during usage of the rollator.

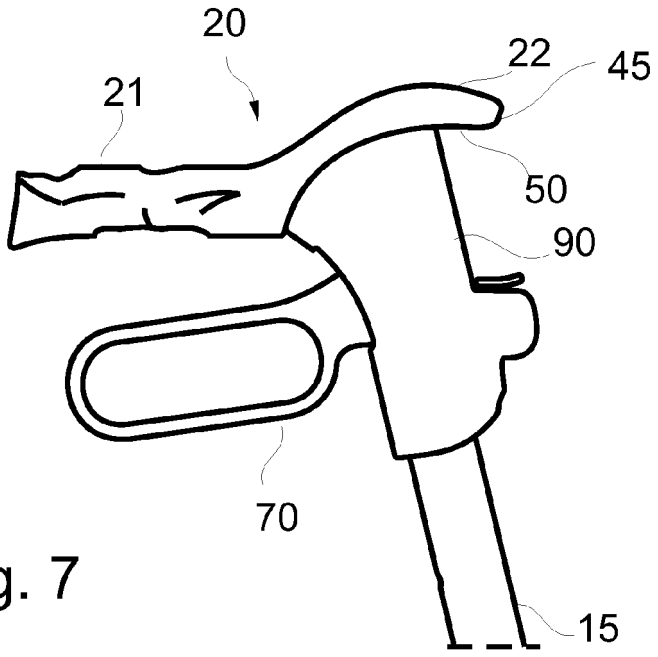

Fig. 7

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Description

FIELD OF THE INVENTION

[0001] The present disclosure relates generally to a supportive device used by lame people as an aid in walking, such as a rollator, a method for forming a hand grip thereof and hand grips for a rollator.

BACKGROUND OF THE INVENTION

[0002] Certain health conditions hinder vertical balance and other mechanics of walking. So-called rollators are used for helping disabled or old person's activity and assuring his/her security. Rollators as understood herein are wheeled supports which aid individuals who have function in their lower limbs, but lack the strength or balance to enable them to walk unsupported. A rollator should be constructed firm, secure, and reliable to avoid any possible accident. Generally, a rollator includes four wheels or at least three wheels in order to avoid the need to lift the device as is the case for walkers. Further, these devices usually include a seat so that a user may use the device to sit and rest.

[0003] Herein, the hand grip of a rollator is of particular interest. Two hand grips of a rollator are positioned on either side of the user. In use, the user holds both hand grips for several reasons. By holding the hand grips, the rollator can give the needed support to the user. The user can hold the hand grip in order to support him/herself. In other words, the hand grip is capable of withstanding a vertical force. Secondly, the rollator provides strength also with respect to any side instability of the user. Thirdly, by pushing the rollator via the hand grip, the rollator is moved into the desired direction.

[0004] Fig. 1 shows an example of a rollator. The rollator 1 includes four wheels. Normally, the two front wheels 11 are twistable whereas the two back wheels 12 are fixed. The rollator may include further features such as a seat 18, a bag (not shown) or a basket. The rollator has two support bars 15 supporting the hand grips 10. Known rollators may additionally have brake handles 17.

[0005] The rollators known assist the user in walking. However, people using walking aids may have further limitations in mobility, for instance caused by long-term diseases or degeneration of joints. In case where such diseases or degeneration influences the function of the hands, it may be difficult for people using a walking aid to grip the rollator in a secure and proper way.

BRIEF SUMMARY OF THE INVENTION

[0006] In view of the above, a method for adapting a rollator grip to the anatomy and/or the posture of a first person is provided. The method includes arranging a hand of the first person on a first material used for the rollator grip; and modelling the first material to adapt the first material to the individual anatomy of the first person's hand and/or to adapt the first material to the ergonomic posture of the first person during usage of the rollator.

[0007] According to a further aspect, a grip for a rollator is provided which is produced by the described method.

[0008] According to a further aspect, a grip for a rollator is provided. The shape of the grip is adapted to a pathologically deformed hand and/or a hand with restricted mobility.

[0009] According to a further aspect, a rollator is provided. The rollator has a grip as described above and/ or as produced by the described method.

[0010] Further aspects, details and embodiments are evident from the dependent claims, the description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] A full and enabling disclosure is set forth more particularly in the remainder of the specification, including reference to the accompanying figures wherein:

Fig. 1 shows a schematic view of a rollator known in the art;

Fig. 2a shows a schematic view of a first material used for a rollator grip according to embodiments described herein;

Fig. 2b shows a schematic view of a core material for a rollator grip according to embodiments described herein;

Fig.3 shows a schematic view of a partly modeled grip according to embodiments described herein;

Fig.4 shows a schematic view of a partly modeled grip according to embodiments described herein;

Fig. 5a shows a flow chart of a method of forming a rollator grip according to embodiments described herein;

Fig. 5b shows a flow chart of a method of forming a rollator grip according to embodiments described herein;

Fig. 6 shows a schematic view of a rollator having the adapted grips according to embodiments described herein;

Fig. 7 shows a schematic view of a rollator grip having a first and a second part according to embodiments described herein;

Fig. 8 shows a schematic view of a rollator according to embodiments described herein having the

grips shown in Fig. 7.

DETAILED DESCRIPTION

[0012] Reference will now be made in detail to the various embodiments, one or more examples of which are illustrated in each figure. Each example is provided by way of explanation and is not meant as a limitation. For example, features illustrated or described as part of one embodiment can be used on or in conjunction with other embodiments to yield yet further embodiments. It is intended that the present disclosure includes such modifications and variations.

[0013] Referring to the drawings, where like or similar elements are designated with identical reference numbers throughout the different figures, Fig. 1 shows a rollator 1 having hand grips 10 as known in the art. As mentioned above, the hand grips allow the person using the rollator to guide the rollator in a desired direction but also to support the person using the rollator.

[0014] Typically, the person who uses the rollator or who intends to use the rollator is referred to as a first person.

[0015] Generally, a first person may be an old person, a person having limitations in mobility, having a disease influencing the moving behavior of the first person, or limitations in mobility due to worn joints. A first person may also be recovering from a treatment or disease, which may results in weak muscles or insecurity when moving.

[0016] For all these conditions, a rollator serves as support to enable the first person to remain independent and mobile. However, a first person who needs a rollator may also suffer from further health or mobility restrictions, for example due to the age. Some diseases may influence the whole person. For instance, a person having weak muscles needs support in walking, but may also have problems with the muscles of the arms or hands, which makes gripping of a subject difficult and laborious. Also, some diseases affect the bones and/or joints, which influences for instance the ability to move the fingers in a precise way and may also weaken the strength by which the first person may grip certain subjects such as a grip. Further, certain diseases or accidents may result in deformed hands. Some persons using a rollator may have a hand prosthesis, which does not allow keeping close contact to known rollator grips.

[0017] Thus, a first person using a rollator and suffering from further restrictions in mobility may have difficulties to grip the rollator known in the art in a secure and strong way. There is a danger if the first person is not able to hold close contact to the grips of a rollator, because the support of the first person by the rollator is not assured and accidents may happen. Also, the first person may not be able to guide the rollator in a proper way, which may result in an insecure handling of the rollator and - for instance - undesired direction changes.

[0018] The same issue may arise if the first person has a modified posture or just shows a modified posture when using the rollator, which is not ergonomic and hence, may further influence the posture in a negative way. If the first person does not feel comfortable during using the rollator, the rollator may not be used frequently and the first person faces again the problem of limited mobility.

[0019] The term "posture" refers to the bearing or carriage of the body. Typically, the posture denotes the posture of the whole body, including for instance the position of the feed, the hips, the back, the head, the arms and so on. A "modified posture" should be understood as deviating from an upright posture. Typically, the modified posture may be durable. According to embodiments, the modified posture may also be temporarily, for instance in a certain situation, such as using a rollator.

[0020] Thus, it is an object of the present application to avoid the danger of insecure rollator handling and improve the acceptance of the rollator as a walking aid and support device. In particular, an object of the present application is to increase the comfort and security of rollator usage especially for people having hand mobility restrictions. For example, the person may have pathologically deformed hands.

[0021] In this context, the term "individual anatomy" or "specific anatomy" or just "anatomy" refers to the structure of at least a certain body part. This structure may include all tissues and bones which are part of the referred body part. Typically, the terms refer to the individual characteristics of the respective structure of a single person. More typically, the terms refer to the characteristics of the structure of a single person with consideration of the anamnesis, such as previous or actual diseases or accidents.

[0022] The term "pathologically deformed" in this context should be understood as referring to at least a body part, whose structure and/or shape is or was influenced by a disease or an accident. For instance, a person having a pathologically deformed hand may have lost parts of the hand, such as one or more fingers. Another example would be a hand which is not able to move in the usual way due to restricted joint mobility. Typically, the "pathologically deformed" hand of a person may be influenced by diseases like gout, osteoarthritis, rheumatism, apoplectic stroke, morbus Dupuytren, spasticity, or the like. According to some embodiments, the term "pathologically deformed" may also refer to body parts having the common shape but whose use is associated with pain.

[0023] Typically, a first person as described herein may suffer from pathologically deformed hands. According to some embodiments, the first person may have restrictions in mobility of the legs, but also other body parts such as the hands.

[0024] According to some embodiments, a method for forming a grip for a rollator is provided, which is adapted to the individual anatomy of the first person. Thereby, the strength of the grip for rollator specific requirements and/or regulatory requirements referring to security as-

pects is considered.

[0025] Typically, a first material is provided, which can be deformed under predetermined conditions. Fig. 2a shows a raw plate of the first material. The material may be a thermoplastic material which may be deformed when heated to a specific temperature. The specific temperature may be about between 50°C to 90°C, preferably to about 60°C to 80°C and more preferably to about 70°C. According to some embodiments, the temperature may be increased by laying the first material in a bath of hot water, by applying hot air to the first material or the like. When the thermoplastic material cools down, for example to ambient temperature, the shape given at the increased temperature remains permanently or at least as long as the first material is not again heated to the specific temperature.

[0026] According to some embodiments, the first material may also be formed in another way, for example, the material is formed at ambient temperature and then subjected to an increased temperature baking and fixing the shape of the first material. In Fig. 2a, the first material 200 is shown in a rectangular shape before the adaption to the specific anatomy of the hand takes place. Typically, the first material may have any shape which allows for adapting the first material to the hand of the first person.

[0027] According to some embodiments, the material may be formed independently of the temperature by further processes allowing the material to be formed and then fixed in the formed shape. For instance, the first material may be a block of material that is treated by abrasive processes. According to some embodiments, the block of first material may be marked before the abrasive treatment in order to show the regions where material has to be removed. Typically, the block of the first material is pre-formed so as to provide a simple shape of the grip, which is then adapted to the individual anatomy of the first person.

[0028] Generally, the first material may be a thermoplastic material, wood, cork, silicone, gypsum, or the like. Typically, the process of forming the grip depends on the chosen material and on the characteristics of the chosen material. For instance, a thermoplastic material may be modeled by applying temperature in a certain range, whereas gypsum may be modeled using the flexible structure when exposed to water and wood may be treated by an abrasive process.

[0029] According to some embodiments, before adapting it to the individual anatomy, the first material is brought into a position which corresponds to the position in which it is used in the rollator. For instance, the first material may be put around a core material of a rollator grip. Fig. 2b shows exemplarily a core material 250, which is preformed to be connected to a rollator. According to some embodiments, the core material 250 may be formed so as to provide an approximate alignment to the rollator grip. Typically, the core material may be adapted to the needs of a rollator, such as providing enough strength to withstand the force exerted by the first person during usage. According to some embodiments, the core material may be a metal such as a sort of steel, wood, gypsum, or the like.

[0030] Generally, the core is adapted to be connected to the rollator. According to some embodiments, the core may be adapted to be connected to several rollator types. Typically, the core is adapted by its shape allowing a connection to a corresponding part of the rollator, for instance, the core may have a connection part enabling fixing the core to the rollator. For example, the connecting part may be specially shaped or may provide an area for connecting the grip to the rollator by adhesives or the like.

[0031] According to embodiments, before adapting it to the individual anatomy of the first person, the first material is positioned on a rollator. For instance, the first material is positioned on the rollator for which the grips are formed. According to other embodiments, an adapter is provided simulating an upper part of a rollator, in particular, the position and orientation of the hand grips. For instance, the adapter may include two rods simulating the rods of a rollator to which the hand grip is mounted.

[0032] Thus, in the embodiments described it is possible to adapt the first material, and hence the rollator grip, to the posture of the first person during usage of the rollator. The grip and first material may thus be adapted to the anatomy and posture of the whole person and not just the anatomy of the hand of the first person.

[0033] Once the first material is in a desired position, a second person may assist in positioning the hand of the first person on the first material. According to some embodiments, the second person may be an orthopedic technician. Typically, the second person may be a person having knowledge of the human anatomy and ergonomic issues of persons using a rollator. For instance, the second person may know which position and posture of the first person behind the rollator is convenient and advantageous with respect to the individual position and condition of the first person. Typically, the second person may consider which posture is suitable and healthy for the first person. Further, the second person may take into account the expected development of the anatomy of the hand of the first person and/or the anatomy of the first person, if - for example - certain diseases influence the anatomy.

[0034] In this context, the term "orthopedic technician" should be understood as a person having skill in the orthopedic and/or anatomic field. However, the orthopedic technician is typically not a medical practitioner and/or does typically not have a medical degree.

[0035] According to some embodiments, the second person may, once the hand of the first person is properly positioned, model the first material according to the shape of the first person's hand or the first person's prosthesis. Typically, the modeling may include forming the first material around the contour and shape of the first person's hand.

[0036] According to some embodiments, modeling the first material "around" a hand denotes surrounding the

hand at least partly by the first material. It should be understood that the term "around" does not mean that the first material encloses the hand completely unless otherwise described. In this context, the term "around" indicates for example the situation, where the first material is positioned around parts of the contour or even the whole contour of the first person's hand. Typically, when it is referred to a "hand", also a prosthesis replacing the hand should be understood to be comprised in the term "hand."

[0037] The modeling may further include taking into account the palm of the hand, specific recesses or projecting parts of the hand. Further, the modeling may include modeling the first material according to the correct position of the fingers of the first person's hand. Typically, the proper and convenient position of the first person and the first person's hand is observed and eventually corrected by the second person.

[0038] Typically, the modeling is performed by pressing the hand of the first person in the first material and shaping the first material according to the needs of the first person. According to some embodiments, the second person may assist the first person in pressing the hand into the first material, for instance in the case, where the first person is not able to provide enough force to make a print of his/her own hand in the first material.

[0039] According to some embodiments, the first person presses (or is assisted to press) the hand for a predetermined time into the first material. The time for pressing depends on material characteristics and the necessity to further shape the first material. Typically, the time for pressing the first person's hand into the first material may be between about 1s and 120 s, more typically between about 5s and 60s and even more typically between about 20s and 40s.

[0040] According to some embodiments, the first material and/or the temperature of the first material is chosen such that the first person does not have to press the hand into the first material during a time exceeding a predetermined time limit. Typically, an old person or a person having pathologically deformed hands may not be able to hold a predetermined pressure for a long time, such as several minutes.

[0041] Typically, the modeling may include generating an imprint of the first person's hand in the first material.

[0042] According to some embodiments, the modeling may also and/or additionally include further shaping the first material. Typically, the further shaping is conducted by a second person. The further shaping of the material may for instance include removing or adding material to the imprint, displacing material from one region to another region or deepening an imprint of the first person's hand. According to some embodiments, the hand of the first person may still rest on the first material after generating the imprint and during further shaping.

[0043] The first material has a predetermined thickness to ensure that the imprint of the hand and the modeling can be performed without endangering the proper function of the grip. For instance, if the thickness of the first material is too thin and considerable shaping has to be performed due to the deformation of the hand, the grip may be too thin in some regions or even get a hole during shaping. Typically, the thickness of the material may be about 1mm to about 10mm, more typically between about 2mm and 5mm, and even more typically between 3mm and 4mm.

[0044] According to some embodiments, for instance when a block of first material is used, the first person may lay the hand on the block of material. Typically, the second person marks the block according to the anatomy of the first person's hand. For instance, the contours of the first person's hand may be marked on the block of first material. According to embodiments, the marking may be made by scratching lines into the block of first material. Typically, the second person may provide further information about the anatomy of the first person's hand on the block of material. For instance, the second person may use different colours to indicate regions, where an abrasive process should take place and/or indicate the depth of abrasions. The adapted grip may then be formed by abrasively removing parts of the block.

[0045] According to some embodiments, the anatomy of the first person's hand may be analyzed by an imaging method. For instance, a scanning method may be used to generate an image of the first person's hand. Typically, a laser scanner may be used, such as a 3D laser scanner, which is able to sense the shape of a hand and generate an image from the gained signals. According to some embodiments, the scanner may be connected to a calculating device, such as a computer or the like, which processes the information obtained by the laser scanner. For example, a computer may receive data referring to the anatomy of the first person's hand and processes these data such that the second person may have an image or information on how to form the corresponding rollator grip.

[0046] Typically, the computer may calculate a raw shape of the grip according to the data obtained from the scanner. In one embodiment, the computer may show the raw shape of an adapted rollator grip. For instance, the second person may model the raw shape of the rollator grip without the need of the first person. According to some embodiments, the second person may model the details of the grip, when the first person stands in front of the rollator. In this way, the second person is able to concentrate on the first person's posture and the details of he pathologically deformed hands.

[0047] According to some embodiments, the computer may be connected to a 3D printing device in order to generate a raw shape of the adapted rollator grip. The computer may use the data obtained from the 3D laser scanner to give corresponding signals to the 3D printer. Typically, the first material may be a material usable for 3D printers. According to some embodiments, the second person may adapt the grip to the rollator and the posture of the first person.

[0048] In Fig. 3, an embodiment is shown using a plate of first material according to Fig. 2a. The first material 300 can be seen in Fig. 3, which is partly wrapped around the core material 350. Fig. 3 provides a back view of the grip to be formed. The core material 350 is preformed so as to facilitate forming the approximate grip shape. As can be seen in Fig. 3, the raw shape of the first material as shown in Fig. 2a is adapted to facilitate the modelling by cutting or forming the first material in a suitable shape before adapting it to the individual anatomy.

[0049] Typically, the second person may wrap the first material at least partly around the core and thereby adapt it in a provisional way to the known anatomic conditions of the hand. For instance, if the hand of the first person has just three fingers, the first material may be provided in a thicker way in the area, where the finger should rest than the area, where no fingers are or vice versa. Also, the second person may already at this time adapt the size of the first material to the first person's hand. For instance, the first material may be delivered in a standard size and the second person may form or cut it into a suitable shape before beginning to position the first material.

[0050] According to some embodiments, the second person may also consider the posture of the first person during positioning the first material. For instance, if the first person does not have an upright posture or tends to stress the body one-sided, the respective load on each side may be considered. If, for instance, the first person has a weaker side of the body, the grip of the weaker side has to bear greater forces than the stronger side. If the grip is not formed properly, a problem may arise with respect to circulatory disorders because the hand of the weaker body side has to transmit greater forces to the grip than the hand of the stronger body side. Thus, the posture and anamnesis of the first person may be considered before and/or during modelling. Typically, more first material may be provided for the grip which should be used for the weaker side of the body. Thus, according to the example described in Fig. 2a, the first material may be chosen to have a greater thickness for the weaker side, whereas for the stronger side, a standard thickness may be convenient.

[0051] Fig. 4 shows a first material 400 around a core 450, which is partly modelled. One can see that several individual protrusions 410 and recesses 420 are formed.

[0052] In Fig. 5a, a schematic flow chart 500 is shown summarizing the steps of the described method. In step 510, the first person's hand is arranged on the first material. According to some embodiments and as mentioned above, the second person may assist. Generally, the first material may be modelled in a raw shape before arranging the first person's hand on it. For instance, the raw shape of the rollator grip may be prepared by the second person using scanning information as described above or may even be prepared by a 3D printer. In step 550, the first material is modelled according to the anatomy of the first person's hand and the posture of the first person.

[0053] In Fig. 5b, a further flow chart 501 of the described method is shown. According to some embodiments, which can be combined with other embodiments described herein, the first material is heated in step 509 before arranging the first person's hand on the first material. According to some embodiments, the first material is heated to a predetermined temperature, such as 70°C. The heated material is then wrapped around a core material such as the one exemplarily shown in Fig. 2b. After cooling to a temperature, which is above ambient temperature, the first person's hand is positioned on the first material in step 510. The temperature, to which it is cooled, depends on the material and on the first person's sensitivity. The second person has to form the first material so that the material may not be too cool for shaping when modelling is performed; however the first person should not feel disagreeable during modelling due to the high temperature of the first material. According to some embodiments, the temperature of the first material may be between about 35°C to about 40°C during modelling.

[0054] Typically, the material is cooled to ambient temperature in step 560 after modelling. According to some embodiments, the material may even be cooled to temperatures below ambient temperature, for instance, to facilitate further processing of the first material.

[0055] According to some embodiments, the first material may be further processed after modelling. For instance, the first material may be abrasively treated in order to avoid sharp edges which may influence haptic characteristics of the rollator grip. According to some embodiments, the first material may be attached to the core material after modelling or after further processing of the first material. However, due care should be taken during further processing so that the individual features of the modelled first material are not destroyed or strongly weakened so that the adapted hand grip is able to provide the above described advantages also after being further processed. Typically, the second person having knowledge in anatomy and ergonomics may conduct the further processing.

[0056] According to some embodiments, which may be combined with other embodiments described herein, the first material may be covered or padded after modelling to ameliorate haptic comfort of the rollator grip. Typically, the first material may be covered with a second material. According to some embodiments, the second material may be leather, cork, plastic material, tissue or the like providing pleasing haptic experiences. The padding material may for example be a non-woven web, plastic materials, tissue or any material suitable for padding grips. Also in case of covering the first material with a second material, due care should be taken to not destroy or overriding modelled structures.

[0057] According to some embodiments, the above described further processing options may be denoted as "finishing" the grip. In this context, the term "finishing" should be understood as performing a process to the

rollator grip after modelling the first material. Apart from the above described processes, further processing methods may be used which are suitable to provide a finishing to the grip.

[0058] Typically, padding the grip may be performed by padding the first material substantially uniformly. That means that a padding material is provided to the grip, wherein the thickness of the padding material is the same over the hole area of the grip. It should be understood that the thickness of the "substantially" uniform padding layer may vary to a certain extent, for example due to process-induced varying material thickness. For instance, the padding material may be wrapped around the grip so as to cover the whole grip and form a padding layer.

[0059] Also, padding the grip may be performed according to above described criteria such as different body side strength, weak muscle or the like. Typically, the adapted rollator grip may be padded so that circulatory disorders may be prevented. For instance, soft pads may be positioned in regions of the adapted rollator grip where high forces are expected during usage of the rollator. The region, where high forces are expected, may depend on the individual anatomy of the first person's hand and/ or the posture of the first person. According to some embodiments, high forces may appear in parts of a hand, when other parts of the hand were removed due to a pathological condition.

[0060] Typically, the second material may also be provided after padding the first material. For instance, the second material may be wrapped around and/or fixed to the first material. According to some embodiments, the second material helps to keep the padding in the desired position.

[0061] According to some embodiments, a rollator is described having grips which are adapted to a person's individual anatomy according to the above described method. Fig. 6 shows a rollator having adapted grips 610. The rollator 600 provides a secure and comfortable handling due to the individualized grips 610. The risk that the first person may not be able to benefit from the walking aid in the usual way is minimized. The first person has a defined and strong support for walking due to the adapted grips, which satisfy the requirements of known rollator grips.

[0062] For instance, the grips should be able to bear the whole weight of the first person if the first person feels sick. According to some embodiments, a single rollator grip should for instance be able to bear the whole weight of the first person due to unforeseen behaviour of the first person or in case of emergency.

[0063] Further, the load on rollator grips should be transferred in a straight way so that the rollator does not roll due to unintended side forces. With the adapted grip as described herein, the force to the grip through the hand is applied in a straight way. If the first person grips the rollator grip known in the art in an inclined way, the force applied to the grip is not straight and the rollator may move undesirably. With the grip according to embodiments described herein, the first person grips the rollator grip in a proper way, because the grip provides recesses and protrusions, which fit with the first person's hand. In that way, the first person's hand slides quasi automatically in the proper position for gripping, holding, and being supported by the rollator. The rollator grip according to described embodiments does not allow for gripping the rollator grip in an inclined way without feeling uncomfortable because the grip does not fit to the hand when it is not properly positioned.

[0064] According to some embodiments, the rollator grip according to embodiments described herein and/or the rollator according to embodiments described herein may have further features. For instance, the adapted rollator grip may be comprised of a first part for being held during movement of the rollator and a second part adapted to be a stand-up support. The first part of such a rollator grip may be the adapted rollator grip according to embodiments described herein. The second part may be positioned in front of the first part, which should be understood in that the second hand part is ahead of the first hand part with respect to the axial direction. In other words, the second part is further away from the user in operation of the rollator than the first hand part. Fig. 7 shows a first part 21 and a second part 22 of a rollator grip 20. Further, a brake handle 70 is also shown.

[0065] Fig. 8 shows a rollator 800 having the grip 20 as described with respect to Fig. 7. The details of such a rollator grip having a second part for stand-up support and details of the second part of the grip are described in the European patent application No. 11164478.7 filed on May 2, 2011, which is hereby incorporated by reference.

Claims

1. Method for adapting a rollator grip to the anatomy and/or the posture of a first person, the method comprising:

   - arranging a hand of the first person on a first material used for the rollator grip; and
   - modelling the first material to adapt the first material to the individual anatomy of the first person's hand and/or to adapt the first material to the ergonomic posture of the first person during usage of the rollator.

2. Method according to claim 1, wherein the modelling is assisted by a second person.

3. Method according to any of the preceding claims, further comprising heating the first material before arranging the hand of the first person on the first material.

4. Method according to claim 3, wherein the first material is heated to about 70°C.

5. Method according to any of the preceding claims, wherein the thickness of the first material is from about 1mm to about 5mm.

6. Method according to any of the preceding claims, further comprising bringing the first material in a position corresponding to the position in which it will be used in the rollator grip before modelling.

7. Method according to any of the preceding claims, wherein the first material is secured to a core material of a rollator grip before or after modelling.

8. Method according to any of the preceding claims, wherein the modelling comprises modelling the first material at least partly around the hand of the first person.

9. Method according to any of the preceding claims, wherein the second person models the first material under consideration of ergonomic aspects of a pathologically deformed hand and/or aged hand and/or a hand which has limitations in mobility and/or the size of the first person and/or the posture of the first person and/or the restricted mobility of the first person and/or the support of pathologically deformed hands and/or the expected development of the pathological deformed hand of the first person and/or the expected development of the restricted mobility of the first person.

10. Method according to any of the preceding claims, wherein the first material is surrounded by a second material after modelling.

11. Grip for a rollator, wherein the shape of the grip is adapted to a pathologically deformed hand and/or a hand with restricted mobility.

12. Grip according to claim 11, wherein the grip comprises a core material, a first material, which is surrounded by a second material, wherein the second material allows for gripping the grip with a pathologically deformed hand, to which the first material is adapted.

13. Grip according to any of claims 11 to 12, wherein the thickness of the first material is from about 1mm to about 5mm.

14. Grip for a rollator, which is produced by the method according to any of claims 1 to 10 and 13.

15. Rollator having a grip according to any of claims 11 to 14.

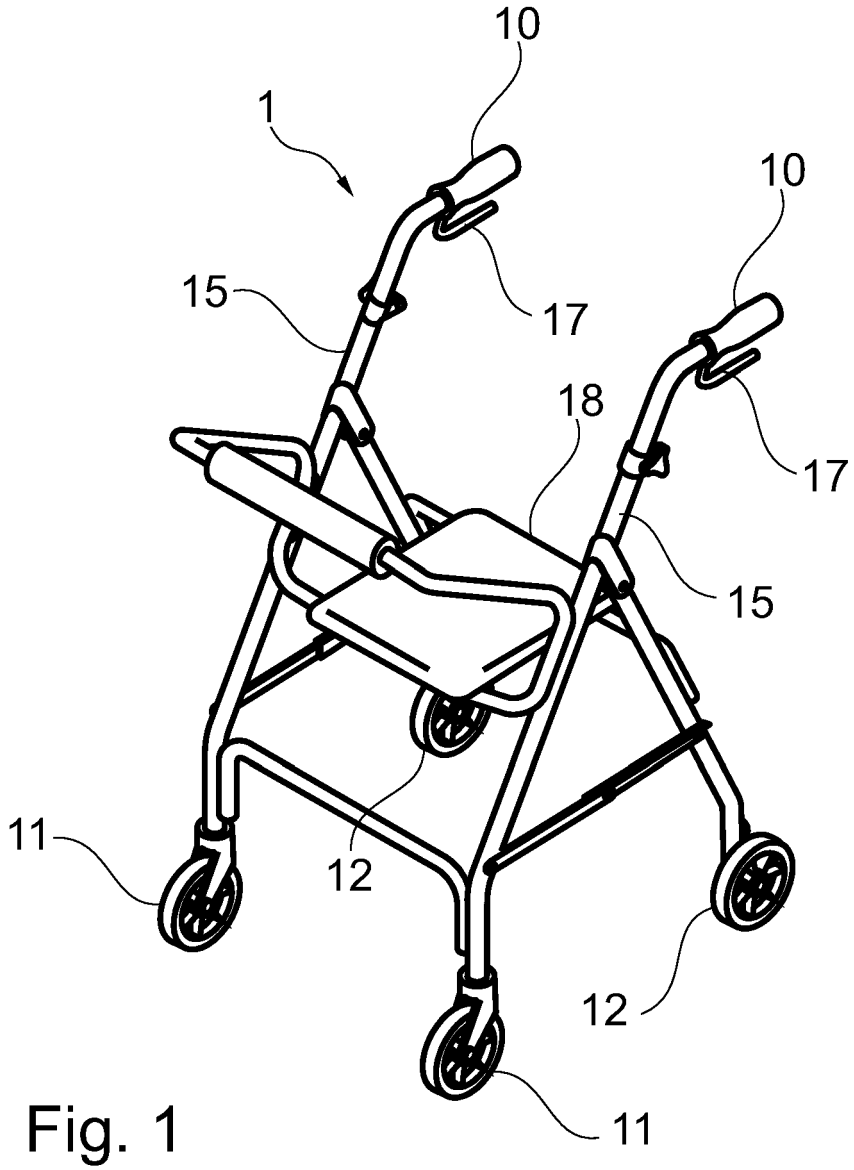

Fig. 1
PRIOR ART

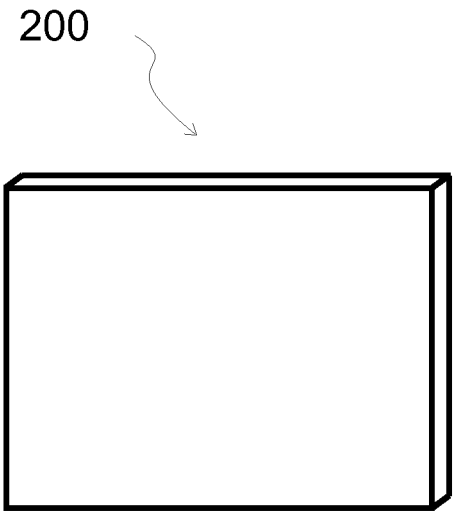

Fig. 2a

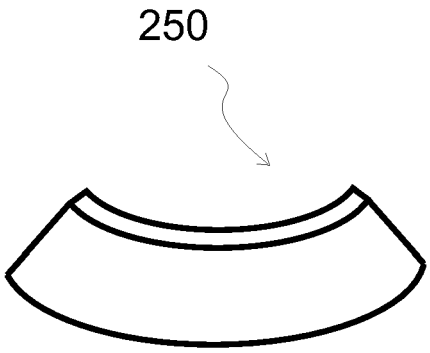

Fig. 2b

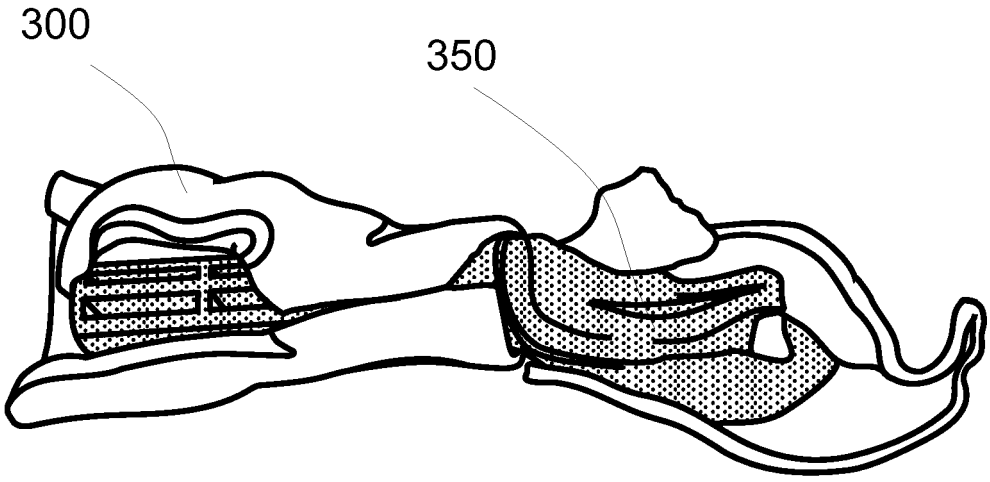

Fig. 3

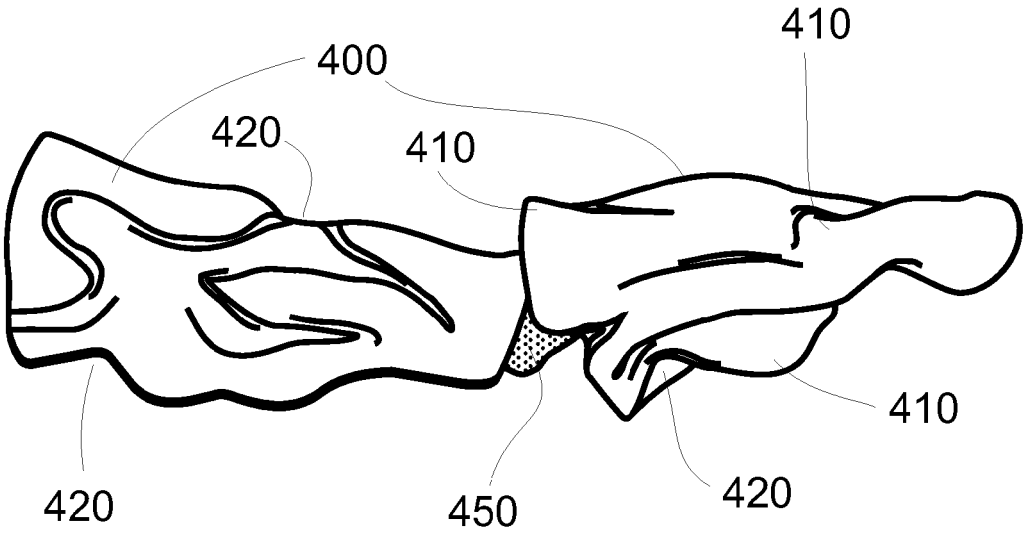

Fig. 4

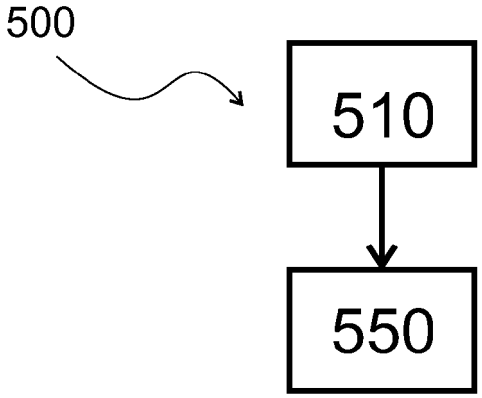

Fig. 5a

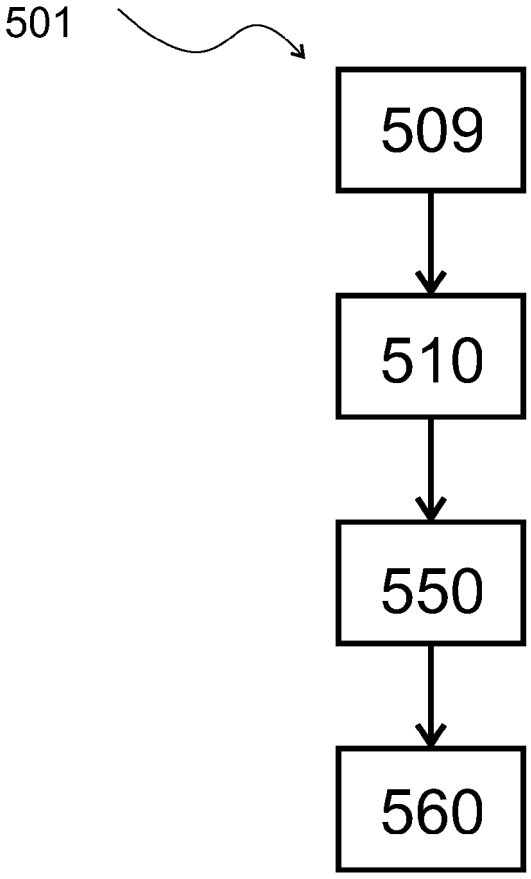

Fig. 5b

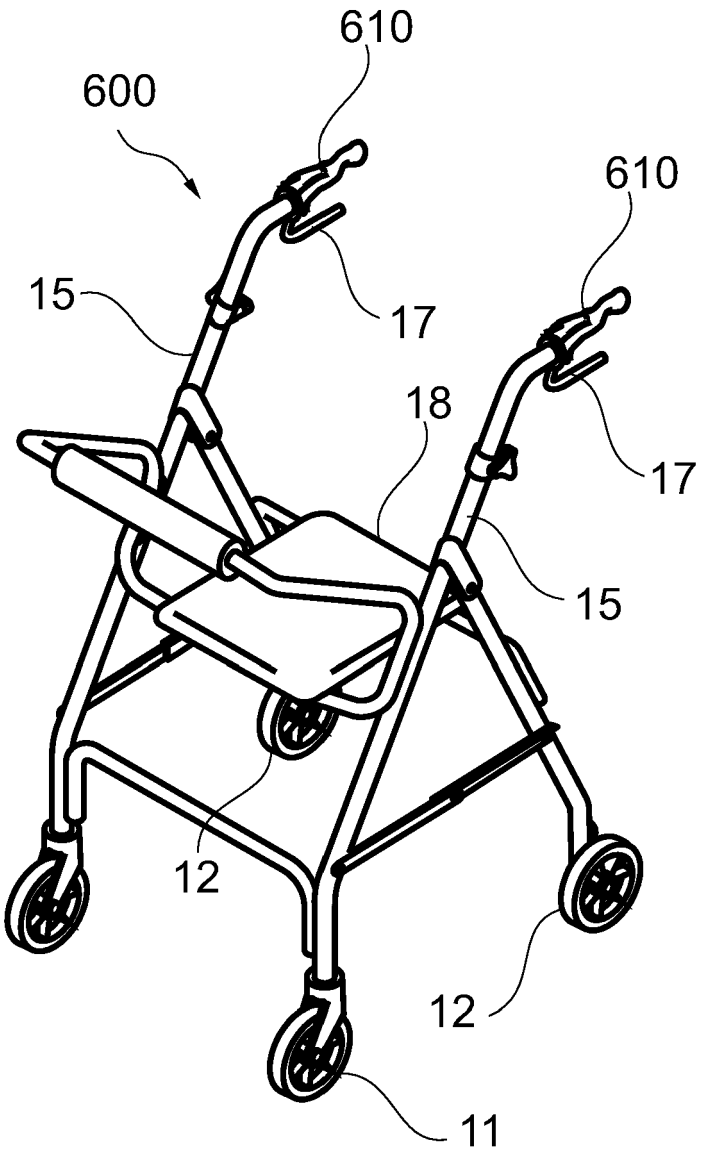

Fig. 6

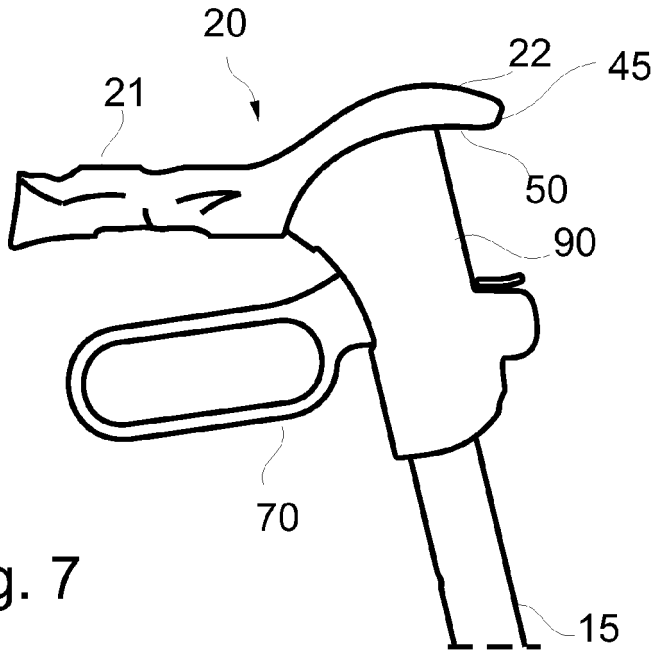

Fig. 7

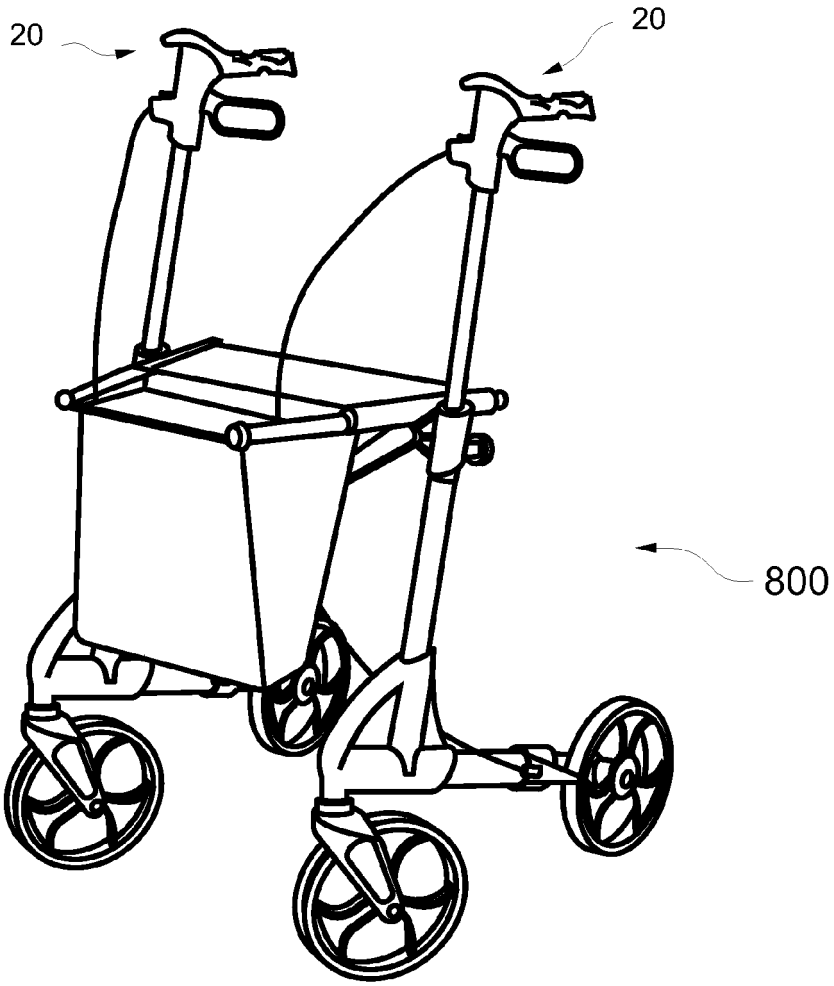

Fig. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 11 17 0353

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	US 5 548 848 A (HUYBRECHTS ROBERT [CA]) 27 August 1996 (1996-08-27) * column 1 - column 2 * * column 4, line 6 - line 45; figures * -----	1-15	INV. A61H3/04 A61G5/10 B25G1/10 A45B9/02
X	US 5 155 878 A (DELLIS EDWARD A [US]) 20 October 1992 (1992-10-20) * column 2, line 60 - column 4, line 39; figures * -----	1-15	
X	EP 1 990 038 A1 (AMG MEDICAL INC [CA]) 12 November 2008 (2008-11-12)	11-13	
A	* paragraph [0002] * * paragraph [0014] * * paragraph [0017] - paragraph [0018]; figures * -----	1-10,14, 15	
X	US 3 995 650 A (DIVITO FRED) 7 December 1976 (1976-12-07) * paragraph [0001]; figures * -----	11-15	

TECHNICAL FIELDS SEARCHED (IPC)

A61H
A61G
B25G
A45B
A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	16 September 2011	Lundblad, Hampus

CATEGORY OF CITED DOCUMENTS

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16-09-2011

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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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