the index finger by these orthoses and fixed in a position opposite the palm of the hand.

Summary

[0004a] In an aspect, the present disclosure refers to a thumb orthosis, in particular for correcting malpositions of the thumb in the carpometacarpal joint, comprising a) a substantially dimensionally stable molded body bent in a U-shape, which in the applied state is fitted on the hand between the thumb and index finger and supports the thumb and fixes it at a distance from the index finger, wherein the molded body bent in a U-shape has a first end portion and a second end portion, and comprising b) a strap which is fastened by one strap end to the first end portion of the molded body, wherein the second end portion of the molded body comprises a guiding element for guiding the strap, characterized in that, as viewed from the first end portion, in the applied state the strap is guided once around the wrist such that it overlaps itself at an overlap point, wherein the two mutually overlapping strap portions are not rigidly connected to one another at the overlap point, and the strap is guided on the guiding element of the second end portion, and the end of the strap can be reversibly fastened to the strap.

[0005] The problem to be solved by the present ~~invention~~ disclosure is that of providing an improved thumb orthosis, in particular a thumb orthosis which permits a good repositioning of the metacarpal of the thumb relative to the carpal bone, especially even permanently, and via which the metacarpal is permanently slightly raised relative to the carpal bone.

[0006] The present disclosure ~~invention~~ solves the technical problem via a thumb orthosis according to ~~claim 1~~the above aspect.

[0007] In an example, ~~The~~ the present disclosure ~~invention~~ solves the technical problem via a thumb orthosis, in particular for correcting malpositions of the thumb in the carpometacarpal joint, comprising a) a substantially dimensionally stable molded body bent in a U-shape, which is fitted on the hand in the applied state, between the thumb and index finger, and supports the thumb and fixes it at a distance from the index finger, wherein the molded body bent in a U-shape has a first end portion and a second end portion, and comprising b) a strap which is fastened by one strap end to the first end portion of the molded body, wherein the second end portion of the molded body has a guiding element for guiding the strap; wherein the strap, as viewed from the first end portion in the applied state, is guided once around the wrist such that it overlaps itself at an overlap point; wherein the two mutually overlapping strap portions are not rigidly connected to one another at the overlap point, and the strap is guided on the guiding element of the second end portion, and the end of the strap may be reversibly fastened to the strap.

[0008] The guiding element serves to guide the strap, wherein in particular a directional change of the strap, i.e. a bending of the strap until it reverses direction, may thereby be effected. At the overlap point, a partial region of the

strap rests on another partial region of the strap, wherein the partial regions may, for example, intersect or run in parallel atop one another.

[0009] The present disclosure ~~invention~~ solves the technical problem via a thumb orthosis, in particular for correcting malpositions of the thumb in the carpometacarpal joint, comprising a) a substantially dimensionally stable molded body bent in a U-shape, which is fitted on the hand between the thumb and index finger in the applied state and supports the thumb and fixes it at a distance from the index finger, wherein the molded body bent in a U-shape has a first end portion and a second end portion, and comprising b) a strap which is fastened by one strap end to the first end portion of the molded body, wherein the second end portion of the molded body comprises a turning element for turning the strap back; wherein the strap, as viewed from the first end portion in the applied state, is guided once around the wrist such that it intersects with itself at an intersection point; wherein the two intersecting strap portions are not rigidly connected to one another at the intersection point, and the strap is turned back at the turning element of the second end portion, and the end of the strap may be reversibly fastened to the strap.

[0010] The guiding element thus serves in particular to change the direction of the strap. The guiding element is therefore designed in particular as a direction changing element.

[0011] In particular, it can be provided that the change in direction brought about the guiding element is a curvature of the strap profile.

[0012] In a preferred ~~embodiment~~example, the guiding element for guiding the strap is therefore a turning element for turning the strap back. The change in direction of the strap is therefore a reversal of direction. In a preferred example~~embodiment~~, the overlap point is therefore an intersection point, and the two overlapping strap portions are two intersecting strap portions.

[0013] The thumb orthosis according to the disclosure ~~invention~~ advantageously leads to a repositioning of the thumb in which the thumb is pulled into the plane of the palm. The more tension that is introduced into the strap, the further the thumb is advantageously positioned in the direction of the palm plane, which surprisingly leads to a pain-relieving positioning of the thumb.

[0014] The ~~embodiment~~ example according to the ~~invention~~ disclosure of the overlapping, in particular intersecting, strap portions, in which the two overlapping, in particular intersecting, strap portions are not fixedly connected to one another at the overlap point, in particular intersection point, leads to an advantageous dynamic overlap point, in particular intersection point. Thus, the position of the overlap point, in particular intersection point, is not predefined and fixed but rather dynamic, and can adapt to the corresponding hand and thumb size. Thus, the desired repositioning of the thumb, in particular into a position in the plane of the palm, and the lifting of the metacarpal relative to the carpal bone, is advantageously possible. Given a dynamic overlap point, the two overlapping strap regions can advantageously slip relative to one another.

[0015] In the context of the present disclosure~~invention~~, a person skilled in the art will clearly understand an intersection point to be the surface at which the two intersecting strap portions overlap. Thus, the intersection point can also be understood as a planar intersection point or intersection face.

[0016] In a preferred ~~embodiment~~example, the overlap point, in particular intersection point, lies in a defined overlap region, in particular intersection region.

[0017] In a preferred ~~embodiment~~example, the overlap point, in particular intersection point, is positioned on the strap such that it is approximately 1.5 to 3 cm away from the strap end fastened to the first end portion of the molded body.

[0018] In a preferred ~~embodiment~~example, the overlap region, in particular the intersection region, of the strap is designed such that the two overlapping or

intersecting strap portions are mounted such that they can slip counter to one another. The overlap region, in particular intersection region, can in particular be designed such that the two overlapping or intersecting strap portions can slip counter to one another only in the overlap region, in particular intersection region.

[0019] In a preferred ~~embodiment~~example, the overlap region, in particular intersection region, of the strap is designed such that one of the two overlapping, in particular intersecting, strap portions has a guide for the other of the two overlapping, in particular intersecting, strap portions. Preferably, the guide is designed in such a way that the guided strap portion is mounted so that it can slip along and transverse to the strap portion having the guide.

[0020] Such a guide advantageously allows the flexibility, according to the invention, of the overlap point, in particular intersection point, of the two strap portions, but at the same time ensures that the overlap point, in particular intersection point, is only displaceable to the extent that the desired repositioning occurs. This prevents an undesired slippage of the strap when wearing the thumb orthosis.

[0021] In a preferred ~~embodiment~~example, the overlap region, in particular intersection region, is formed as a loop on or in the strap, through which the strap can be pulled, wherein the loop is arranged in the region of the strap which follows the first end portion of the molded body. A loop as a guide is thin and allows for slippage of the guided strap portion in a simple manner.

[0022] In a preferred ~~embodiment~~example, the loop forms a slot that is wider than the width of the strap.

[0023] Preferably, the guide, in particular the loop, therefore has a length that is greater than the width of the strap in the guided strap portion, so that the guided strap portion can slip in the loop. Preferably, the guide, in particular the

loop, has a length of at least 1.2 times the width of the guided strap portion, particularly preferably of at least 1.5 times the width of the guided strap portion. Preferably, the guide, in particular the loop, has a length of at most 3 times the width of the guided strap portion, particularly preferably of at most 2 times the width of the guided strap portion. Preferably, the guide, in particular the loop, has a length of at least 1.2 times and at most 3 times the width of the guided strap portion, particularly preferably of at least 1.5 times and at most 2 times the width of the guided strap portion.

[0024] The base strap lying under the loop of the strap is preferably designed as a solid material so that no window edema can form on the covered tissue. Preferably, therefore, the base strap is uniformly continuous at this point and the loop is placed on it or attached to it, and not constructed as a notch of the base strap.

[0025] In an alternative ~~embodiment~~example, the overlap region, in particular intersection region, is designed as a hook-and-loop fastener. This also allows a dynamic positioning of the overlap point, in particular intersection point.

[0026] In a preferred ~~embodiment~~example, the end of the strap can be reversibly fastened to the strap via a pin closure, via a hook-and-loop fastener, or via a hook/eye closure. In a preferred ~~embodiment~~example, the end of the strap has a pin closure, a hook-and-loop fastener, or a hook/eye closure on the strap, with which it can be reversibly fastened to the strap. In a preferred ~~embodiment~~example, the end of the strap has on the strap a pin, a hook-and-loop or fleece surface, or a hook or an eyelet, with which it can be reversibly fastened to the strap.

[0027] In a preferred example~~embodiment~~, the molded body and the strap are formed in one piece.

[0028] In a preferred exampleembodiment, the guiding element is formed on the second end portion of the molded body as a loop, or is formed as at least one notch in the second end portion, or is designed as a perforated strap.

[0029] In a preferred exampleembodiment, the guiding element is formed on the second end portion of the molded body as a loop, or as two notches in the second end portion.

[0030] In a preferred exampleembodiment, the turning element is formed on the second end portion of the molded body as a notch in the second end portion.

[0031] In a preferred exampleembodiment, the guiding element can be fastened to the strap via a fixing element. In a preferred exampleembodiment, the guiding element can be fastened to the holes of the strap via a fixing element.

[0032] In a preferred exampleembodiment, the guiding element can be reversibly fastened to the strap via a fixing element. In a preferred exampleembodiment, the guiding element can be reversibly fastened to the holes of the strap via a fixing element.

[0033] In a preferred exampleembodiment, the guiding element can be reversibly fastened to the strap via a pin closure, via a hook-and-loop fastener, or via a hook/eye closure.

[0034] In a preferred exampleembodiment, the guiding element is designed as a perforated strap with which is preferably associated a fixing element, for example a pin closure, for fixing at least one of the holes of the perforated strap to the strap, in particular to at least one of the holes of the strap. In a preferred embodiment, the guiding element is thus designed as a perforated strap and fixing element. The fixing element, for example a pin closure, can connect one of the holes of the guiding element to one of the holes of the strap such that the direction of the strap can be guided differently depending on the selected

hole of the guiding element in combination with the selected hole of the strap. This embodiment advantageously allows for a more specific adaptation of the desired guidance of the strap.

[0035] In a preferred example~~embodiment~~, the molded body is saddle-shaped.

[0036] In a preferred example~~embodiment~~, the molded body has air holes. This allows a ventilation and removal of moisture in the carpometacarpal region covered by the molded body.

[0037] In a preferred example~~embodiment~~, the molded body consists of an integrally shapeable material. Thus, if desired or necessary, the molded body can be adapted to the exact anatomy of the patient's hand.

[0038] In a particularly preferred example~~embodiment~~, the thumb orthosis is designed with the features shown in Figure 1, 3, 4, and 6, in particular of the embodiment of the loop shown there. Preferably, the loop is not formed on the strap as a loop for fixing a wristband closure, i.e. transverse to the strap, but rather along the strap, whereby in particular an intersection region can be formed.

[0039] Preferably, the loop travels approximately longitudinally relative to the strap. Preferably, the loop travels on the strap such that an intersection region can be formed. Preferably, the loop travels longitudinally relative to the strap. Preferably, the loop does not travel transverse to the strap.

[0040] Further preferred examples ~~embodiments~~ result from the dependent claims.

[0041] The invention is explained in more detail using the exemplary embodiment of Figures 1 to 14, without this exemplary embodiment being understood as limiting.

[0042] In the drawings: