

THUMB ORTHOSIS

DESCRIPTION

5 [0001] The present invention relates 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 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
10 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, for example has a turning element for turning the strap back.

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[0002] Rhizarthrosis is an arthrosis of the thumb carpometacarpal joint. The articular cartilage is thereby worn away, leading to a painful rubbing of the joint surfaces against one another. Typical symptoms are pain and muscle weakness in the thumb. The thumb carpometacarpal joint is one of the smallest
20 but most stressed joints of the body. The carpometacarpal joint connects the first metacarpal and the greater trapezoid bone (Os trapezium) of the carpal bones. Due to its particular shape, it gives the thumb great mobility and thus makes gripping and holding possible.

25 [0003] Special wrist braces can immobilize and relieve the affected joint. WO 2016/011999 A1 discloses a dynamic orthosis in which the bones of the thumb carpometacarpal joint are pulled apart upon movement, and thus the painful rubbing should be avoided. Further thumb orthoses are known from DE 295 21 749 U1, WO 2013/160478 A1, FR 2919491 A1, and EP 2 453 849 B1.

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[0004] Given thumb orthoses from the prior art, however, a repositioning of the metacarpal of the thumb is not possible. Rather, the thumb is pulled away from

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

5 [0005] The problem to be solved by the present invention 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.

10 [0006] The present invention solves the technical problem via a thumb orthosis according to claim 1.

15 [0007] The present 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
20 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
25 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.

30 [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 invention solves the technical problem via a thumb
5 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
10 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
15 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.

20 [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
25 about the guiding element is a curvature of the strap profile.

[0012] In a preferred embodiment, 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 embodiment, the
30 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 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
5 surprisingly leads to a pain-relieving positioning of the thumb.

[0014] The embodiment according to the invention 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
10 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
15 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 invention, a person skilled in the art will
20 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, the overlap point, in particular intersection
25 point, lies in a defined overlap region, in particular intersection region.

[0017] In a preferred embodiment, 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.

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[0018] In a preferred embodiment, 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
5 region.

[0019] In a preferred embodiment, 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
10 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
15 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.

20 [0021] In a preferred embodiment, 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
25 slippage of the guided strap portion in a simple manner.

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

30 [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.

10 [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.

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[0025] In an alternative embodiment, 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.

20 [0026] In a preferred embodiment, 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, 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, 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.

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

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[0028] In a preferred embodiment, 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.

- 5 [0029] In a preferred embodiment, 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.

- 10 [0030] In a preferred embodiment, 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 embodiment, the guiding element can be fastened to the strap via a fixing element. In a preferred embodiment, the guiding element can be fastened to the holes of the strap via a fixing element.

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

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[0033] In a preferred embodiment, 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.

- 25 [0034] In a preferred embodiment, 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
- 30 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.

5 [0035] In a preferred embodiment, the molded body is saddle-shaped.

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

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[0037] In a preferred 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.

15 [0038] In a particularly preferred 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.

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[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.

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

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[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:

- Figure 1 shows a first embodiment of the thumb orthosis according to the invention on a hand;
- Figure 2 shows the thumb orthosis from Figure 1 from a different perspective;
- Figure 3 shows the thumb orthosis from Figure 1 from a different perspective;
- Figure 4 shows the thumb orthosis from Figure 1 in the non-applied state;
- Figure 5 shows the thumb orthosis from Figure 4 from a different perspective;
- Figure 6 shows the thumb orthosis from Figure 4 with crossed strap;
- Figure 7 shows the thumb orthosis from Figure 6 from a different perspective;
- Figure 8 shows a second embodiment of the thumb orthosis according to the invention on a hand;
- Figure 9 shows the thumb orthosis from Figure 8 from a different perspective;
- Figure 10 shows the thumb orthosis from Figure 8 from a different perspective;
- Figure 11 shows the thumb orthosis from Figure 8 in a non-applied state;
- Figure 12 shows the thumb orthosis from Figure 11 from a different perspective;
- Figure 13 shows the thumb orthosis from Figure 11 with overlapping strap;
- Figure 14 shows the thumb orthosis from Figure 13 from a different perspective;
- Figure 15 shows a further embodiment of the guiding element of a thumb orthosis according to the invention.

[0043] Figure 1 shows a preferred embodiment of a thumb orthosis (100) according to the invention on a right hand (200) of a patient. The person skilled

in the art can readily produce a corresponding thumb orthosis for a left hand. The thumb orthosis (100) has a molded body (10) bent in a U-shape, which rests on the hand (200) in a saddle shape between thumb (201) and index finger (203). The molded body (10) bent in a U-shape has a first end portion (11) which, in the tightened state, is located on the outer surface of the hand (200). A strap (20) is fastened to said first end portion (11) by its first strap end (21) of the first strap portion (20a). The strap (20) travels around the wrist (204) so as to intersect with itself. The exact course of the strap (20) can be seen in Figures 2 and 3.

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[0044] Figure 2 shows the thumb orthosis (100) from Figure 1 from a different perspective. The hand (200) on which the molded body (10), bent in a U-shape, rests between thumb (201) and index finger (203), can again be seen. Said molded body has, on the palm of the hand, a second end portion (12) with a turning element (13) designed as a slot. The strap (20), traveling around the wrist (204) in an intersecting manner, is turned in the turning element (13).

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[0045] Figure 3 shows the thumb orthosis (100) from Figure 1 from a third perspective. The hand (200) on which the molded body (10), bent in a U-shape, rests between thumb (201) and index finger (203) can again be seen. At the first end portion (11), the strap (20) begins to travel around the wrist (204). In the first strap portion (20a), it has an intersection region (24) formed as a loop (25). The strap (20) travels around the wrist (204) and crosses in the intersection region (24) in that it is guided through the slot (26) formed by the loop (25), resulting in an intersection point (22). The strap (20) then travels to the second end portion (12) of the molded body (10) and is turned there at the turning element (13). For tightening the strap (20), the second strap portion (20b) thereof rests, up to its second strap end (23), on the first strap portion (20a), and is reversibly connected thereto via a pin closure (not visible).

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[0046] The intersection point (22) thereby lies between the radial head and the thumb carpometacarpal joint (202) of the hand (200).

[0047] The thumb orthosis (100) shown in Figures 1 to 3 advantageously results in repositioning of the thumb (201) taking place, in that the strap (20) dynamically intersects in the intersection region (24), in which repositioning the thumb (201) does not lie opposite the palm of the hand, as can be seen in particular in Figure 2, but rather lies in the plane of the remainder of the hand (200). In addition, the metacarpal is advantageously raised slightly relative to the carpal bone. The thumb (201) is thus pulled dorsally, and at the same time abducted, by tightening the strap (20). At the same time, the intersecting strap (20) fixes the thumb orthosis (100) on the wrist. Advantageously, only the one strap (20) must be tightened for the thumb orthosis (100) to function fully.

[0048] Figures 4 and 5 show the thumb orthosis (100) without a hand. The molded body (10), bent in a U-shape or saddle-shape, with the first end portion (11) and the second end portion (12) is visible. The first strap portion (20a) of the strap (20) is fastened by its first strap end (21) to the first end portion (11). The first strap portion (20a) has a loop (25) through whose slot (26), which is wider than the strap (20), the strap (20) can be guided dynamically and movably. The loop (25) travels along the strap (20) and not transversely, as a conventional loop for fixing a strap such as a watch strap would travel. The strap (20) has holes (28) of a pin closure into which two pins (27) on the second strap portion (20b) can be inserted at the second strap end (23) to close the strap (20), after the strap (20) has been turned by the turning element (13) of the second end portion (12) of the molded body (10), designed as a slot, and thus can be tightened.

[0049] Figures 6 and 7 show the thumb orthosis (100) from Figures 4 and 5 with the intersecting course of the strap (20). The strap (20) begins at the first strap end (21) on the first end portion (11) of the U-shaped molded body (10) and forms a loop. Then, the strap (20) crosses over itself in the intersection region (24) in that it is guided through the slot (26) of the loop (25). The strap (20) is then turned by the turning element (13) at the second end portion (12)

of the U-shaped molded body (10), and is fastened to itself tightly and such that it can be released again, via the pin closure consisting of pins (27) and holes (28). Via the plurality of holes (28), a fastening that is adapted to the wrist diameter is thereby possible.

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[0050] Moreover, in Figure 7 further preferred air holes (14) which allow ventilation of the palm lying under the molded body (10) are also visible in said molded body (10).

10 [0051] Figure 8 shows an alternative embodiment (300) of a thumb orthosis according to the invention, here again on a right hand (200) with thumb (201), index finger (203), and wrist (204). For this embodiment of the thumb orthosis (300), too, the person skilled in the art can readily provide a corresponding thumb orthosis for a left hand. The thumb orthosis (300) has a molded body
15 (310), bent in a U-shape, which rests on the hand (200) in a saddle shape between the thumb (201) and index finger (203). The molded body (310), bent in a U-shape, has a first end portion (311) which, in the tightened state, is located on the outer surface of the hand (200). A strap (320) is fastened by its first strap end (not visible here) of the first strap portion to said first end portion
20 (311). The strap (320) travels around the wrist (204) in a partially overlapping manner. A slot (326) formed by a loop (325) is thereby guided, as a guiding element of the strap (320), so that an overlap region or overlap point (324) results. The exact course of the strap (320) can be seen in Figures 9 and 10.

25 [0052] Figure 9 shows the thumb orthosis (300) from Figure 8 from a different perspective. The hand (200), on which the molded body (310), bent in a U-shape, rests between the thumb (201) and index finger (203), can again be seen. Said molded body has a second end portion (312) on the palm of the hand, with a guiding element (313) designed as two loops. The strap (320),
30 traveling around the wrist (204) in an overlapping manner, is turned in the guiding element (313).

[0053] Figure 10 shows the thumb orthosis (300) from Figure 8 from a third perspective. The hand (200), on which the molded body (310), bent in a U-shape, rests between the thumb (201) and index finger (203), can again be seen. In the region of the wrist (204), the strap (320) is guided through a loop (325), whereby the strap (320) forms an overlap region.

[0054] The thumb orthosis (300) shown in the embodiment of Figures 8 to 10 also advantageously results in a repositioning of the thumb (201) taking place, in that the strap (320) overlaps dynamically in the overlap region (324), in which repositioning the thumb (201), as visible in particular in Figure 9, does not lie opposite the palm but rather in the plane of the remainder of the hand (200). Moreover, here as well the metacarpal is advantageously slightly raised relative to the carpal bone. The thumb (201) is thus likewise pulled dorsally, and at the same time abducted, by tightening the strap (320). At the same time, the overlapping strap (320) fixes the thumb orthosis (300) on the wrist (204). Here as well, advantageously only the one strap (320) must be tightened for the full function of the thumb orthosis (300), wherein the handling in this embodiment is even simpler than in the alternative embodiment according to Figures 1 to 7.

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[0055] Figures 11 and 12 show the thumb orthosis (300) without a hand. The molded body (310), bent in a U-shape or saddle-shape, with the first end portion (311) and the second end portion (312) is visible. The first strap portion (320a) of the strap (320) is fastened by its first strap end (321) to the first end portion (311). The first strap portion (320a) has a loop (325) through whose slot (326), which is wider than the strap (320), the strap (320) can be guided dynamically and movably. The strap (320) comprises holes (328) of a pin closure, into which it is possible to insert a pin (327) on the second strap portion (320b), at the second strap end (323), to close the strap (320) after the strap (320) has been guided through the guiding element (313) of the second end portion (312) of the molded body (310), which guiding element is designed as two loops with slots, and can thus be tightened.

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[0056] Figures 13 and 14 show the thumb orthosis (300) from Figures 11 and 12 with the overlapping course (324) of the strap (320). The strap (320) begins at the first strap end (321) at the first end portion (311) of the U-shaped molded body (310) and forms a loop. Then, the strap (320) overlaps itself in the overlap region (324) in that it is guided through the slot (326) of the loop (325). The strap (320) is guided, at the second end portion (312) of the U-shaped molded body (310), via the guiding element (313), and is fastened to itself, tightly and such that it can be released again, in the overlap region (324) via the pin closure consisting of a pin (327) and holes (328). A fastening adapted to the wrist thickness is thereby possible via the plurality of holes (328). The pin (327) is thereby located in the second strap portion (320b), i.e. in the region of the second strap end (323). The first strap portion (320a) thus overlaps here with the second strap portion (320b).

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[0057] Figure 15 shows a further thumb orthosis (400) on a right hand (200) with thumb (201), in which the molded body (410) with the second end portion (412) follows an alternative embodiment of the guiding element (413). Here, the guiding element (413) consists of a perforated strap with holes (413a) with which a pin closure (413b) is associated. The pin closure (413b) can reversibly connect one of the holes (413a) of the guiding element (413) to one of the holes (428) of the strap (420), such that the direction curve of the strap (420) can be guided differently depending on the selected hole (413a) of the guiding element (413) in combination with the selected hole (428) of the strap (420). This embodiment advantageously enables a more specific adaptation of the desired guidance of the strap (420).

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List of reference signs:

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| 10 | molded body bent in a U-shape |
| 11 | first end portion |

12	second end portion
13	turning element
14	air holes
20	strap
20a	first strap portion
20b	second strap portion
21	first strap end
22	intersection point
23	second strap end
24	intersection region
25	loop in the intersection region
26	slot
27	pin of a pin closure
28	hole of a pin closure
100	thumb orthosis
200	hand
201	thumb
202	carpometacarpal joint
203	index finger
204	wrist
300	thumb orthosis
310	molded body
311	first end portion
312	second end portion
313	guiding element
320	strap
320a	first strap portion
320b	second strap portion
321	first strap end
323	second strap end
324	overlap region or overlap point

325	loop in the overlap region
326	slot
327	pin
328	holes
400	thumb orthosis
410	molded body
412	second end portion
413	guiding element
413a	holes of the guiding element
413b	pin closure
420	strap
428	holes of the strap

Claims

1. Thumb orthosis (100, 300, 400), in particular for correcting malpositions of the thumb (201) in the carpometacarpal joint (202), comprising a) a
5 substantially dimensionally stable molded body (10, 310, 410) bent in a U-shape, which in the applied state is fitted on the hand (200) between the thumb (201) and index finger (203) and supports the thumb (201) and fixes it at a distance from the index finger (203), wherein the molded body (10, 310, 410) bent in a U-shape has a first end portion (11, 311) and a second end portion
10 (12, 312, 412), and comprising b) a strap (20, 320, 420) which is fastened by one strap end (21, 321) to the first end portion (11, 311) of the molded body (10, 310, 410), wherein the second end portion (12, 312, 412) of the molded body (10, 310, 410) comprises a guiding element (13, 313, 413) for guiding the strap (20, 320, 420), **characterized in that**, as viewed from the first end portion
15 (11, 311), in the applied state the strap (20, 320, 420) is guided once around the wrist (204) such that it overlaps itself at an overlap point (22), wherein the two mutually overlapping strap portions (20a, 20b, 320a, 320b) are not rigidly connected to one another at the overlap point (22), and the strap (20, 320, 420) is guided on the guiding element (13, 313, 413) of the second end portion
20 (12, 312, 412), and the end (23, 323) of the strap (20, 320, 420) can be reversibly fastened to the strap (20, 320, 420).

2. Thumb orthosis (100, 300, 400) according to claim 1, wherein the second end portion (12, 312, 412) of the molded body (10, 310, 410) has a
25 turning element (13, 313, 413) as a guiding element for turning the strap (20, 320, 420), wherein, as viewed from the first end portion (11, 311), in the applied state the strap (20, 320, 420) is guided once around the wrist (204) such that it intersects with itself at an intersection point (22) as an overlap point, wherein the two intersecting strap portions (20a, 20b, 320a, 320b) are not rigidly
30 connected to one another at the intersection point (22), and the strap (20, 320, 420) is turned at the turning element (13, 313, 413) of the second end portion (12, 312, 412).

3. Thumb orthosis (100) according to one of the preceding claims, wherein the turning element (13) on the second end portion (12) of the molded body (10) is formed as a notch in said second end portion (12).

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4. Thumb orthosis (300) according to claim 1 or claim 2, wherein the guiding element (313) is formed as a loop for pulling the strap (320) through.

5. Thumb orthosis (400) according to claim 1 or claim 2, wherein the guiding element (413) can be reversibly fastened to the strap (420) via a pin closure (413b), via a hook and loop fastener, or via a hook/eye closure.

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6. Thumb orthosis (400) according to claim 1 or claim 2 or claim 5, wherein the guiding element (413) is formed as a perforated strap (413a) and fixing element (413b).

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7. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the overlap point (22), in particular intersection point (22), is located in a defined overlap region (24, 324), in particular intersection region (24, 324).

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8. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the overlap region (24, 324), in particular intersection region (24, 324), is formed as a loop (25, 325) on or in the strap (20, 320, 420), through which the strap (20, 320, 420) can be pulled, wherein the loop (25, 325) is arranged in the region (20a, 320a, 420a) of the strap (20, 320, 420) which follows the first end portion (11, 311) of the molded body (10, 310, 410).

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9. Thumb orthosis (100, 300, 400) according to claim 8, wherein the loop (25, 325) forms a slot (26, 326) that is wider than the width of the strap (20, 320, 420).

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10. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the overlap region (24, 324), in particular intersection region (24, 324), is designed as a hook-and-loop fastener.
- 5 11. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the end (23, 323) of the strap (20, 320, 420) can be reversibly fastened to the strap (20, 320, 420) via a pin closure (27, 28, 327, 328, 428), via a hook-and-loop fastener, or via a hook/eye closure.
- 10 12. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the molded body (10, 310, 410) and the strap (20, 320, 420) are integrally formed.
- 15 13. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the molded body (10, 310, 410) is saddle-shaped and has air holes (14), and wherein the molded body (10, 310, 410) consists of a shapeable material.
- 20 14. Thumb orthosis (100, 300, 400) according to any one of the preceding claims, wherein the thumb orthosis pulls the thumb into the plane of the palm when worn on a hand.