

(19)



(11)

EP 1 941 809 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

09.07.2008 Bulletin 2008/28

(51) Int Cl.:

A44B 11/04 (2006.01)

A61F 5/01 (2006.01)

(21) Application number: **07150462.5**

(22) Date of filing: **28.12.2007**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE
SI SK TR**

Designated Extension States:

AL BA HR MK RS

(30) Priority: **08.01.2007 IT VR20070004**

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(54) **Loop for laces**

(57) A loop for straps, belts, laces or similar comprising a body (10) made from a substantially plastic, metallic or similar material, with sides having a cylindrical, elliptical or similar cross-section; the long sides (11, 12) have

a plurality of knurlings or protuberances (16) designed to hold the strap in position and prevent it from slipping sideways.

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Description

TECHNICAL FIELD

[0001] The present invention relates to a loop for straps which permits the passage of straps in various applications such as the fixing of tutors and other items of rehabilitation equipment used in orthopaedics and in particular in the sector of corrective or rehabilitation devices.

[0002] In particular the present invention comprises a loop for straps which in comparison with known solutions has the advantage that it guarantees that the strap passing through the loop remains perfectly spread and does not bunch up, slip or locally deform as is usually the case with loops of the known type.

[0003] The loop according to the invention is therefore suitable for use in a variety of situations and applications; it has a very simple design and can therefore be manufactured at a very low cost.

[0004] The loop according to the present invention comprises an oblong ring shaped loop with a plurality of substantially ring-shaped protuberances positioned at a set distance apart on the loop.

[0005] The present invention relates to the field of accessories for orthopaedic products and tutors principally used in conservative, post-traumatic, rehabilitation and post-operative therapies.

[0006] The present invention is suitable for applications in all those sectors where belts, straps and similar items and their supports and loops are used.

BACKGROUND OF THE INVENTION

[0007] According to the conventional art, straps and belts are used in multiple sectors wherever means of attaching components, parts and similar items are required.

[0008] Straps and belts are used, for example, in the orthopaedics sector during conservative, post-traumatic and rehabilitation and post-operative therapies principally for attaching and fixing orthopaedic aids, tutors, corsets, immobilizers, knee supports, thigh supports and aids of other types.

In general the straps and belts are passed through loops which can be of different shapes but which usually comprise a substantially oblong ring shaped body with rounded, smooth sides.

[0009] The problem which occurs when using loops of the known type derives from the fact that the loop surface is rounded and smooth and causes the belt or strap to move and slide along the loop bunching up and forming unwanted folds in the strap.

[0010] A strap passing through the conventional loops with a smooth surface becomes deformed thus modifying the fixing efficiency of the same.

[0011] This means that the user is obliged to continuously adjust the strap or belt in the loop to prevent the strap or belt from jamming in the loop and to prevent all

the other problems which derive from this.

DESCRIPTION OF THE INVENTION

[0012] The object of the present invention is that of providing a loop which allows the passage of straps, belts or similar and keeps these constantly spread over the entire length of the loop thereby eliminating or at least reducing the shortcomings described previously.

[0013] In particular, the loop according to the present invention proposes to overcome the disadvantages caused by folding of the belts or straps passing through loops of the known type.

[0014] The invention provides a loop which is easy to make and therefore inexpensive; the loop is efficient in terms of the secureness and the stability of the strap or belt that passes through it.

[0015] This is achieved by means of a loop for straps and belts with the characteristics described in the main claim.

[0016] The dependent claims describe preferred embodiments of the invention.

[0017] The present invention achieves the aims described by providing a loop comprising a body made from a substantially plastic material or a metallic or similar material, with an oblong ring shape with sides having a cylindrical, elliptical or similar cross-section, fitted with a plurality of protuberances which are substantially ring shaped.

[0018] The surface protuberances or knurling along the sides of the loop prevent the strap passing through the loop from deforming and thereby modifying the fixing conditions. The utility of this feature is linked to the fact that the surface knurling deforms the strap locally where it passes through the loop so that it is under tension and cannot undergo macro deformations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Further features and advantages of the invention will become apparent from the description of an example embodiment which follows with reference to the annexed drawings, given purely by way of a non-limiting example, in which:

- Figure 1 shows a front view of the loop according to the present invention.
- Figure 2 shows a perspective view of the loop according to the present invention provided with the anti-slip knurlings or protuberances.
- Figure 3 shows the loop according to the present invention where one side is attached to the fixed end of a support and where a belt or a strap passes through the other side.

DESCRIPTION OF AN EXAMPLE EMBODIMENT

[0020] The loop according to the present invention is

principally but not exclusively used in the orthopaedics sector for fixing tutors, orthopaedic aids and similar items indicated generally with the numeral 10 and substantially comprising a rigid body made from plastic, metal or similar materials, having a substantially oblong ring shape, with two, slightly curved long sides 11 and 12 facing each other and connected to each other by two curved sections 13 and 14.

[0021] The shape of the loop 10 forms a central opening, indicated by 14, which is suitable for the passage of a belt or passing item, and which in the example shown has a substantially circular section.

[0022] The special feature of the invention consists of the presence of a plurality of surface protuberances or knurlings 16 positioned one after the other along the two long sides 11 and 12.

[0023] The surface knurling or protuberances 16 are also substantially ring-shaped and have raised edges whose function is to locally deform the fixing flap 17 on one side and the strap or belt 18 on the other side.

[0024] Figure 3 shows that the protuberances 16 prevent the strap 18 on one side and the fixing flap 17 on the other from deforming during sideways movements or pulling and thereby stop the strap and fixing element from moving and modifying the fixing conditions.

[0025] It should be noted that the utility of this type of loop stems from the fact that the surface knurling locally deforms the strap so that it is under tension when it passes through the loop and thereby prevents the strap from undergoing macro deformations which create the drawbacks described above.

[0026] Clearly the knurling or protuberances 16 can be of any shape and thickness and can be positioned anywhere along the loop side which in turn can be of any shape or cross-section.

[0027] The invention as described above refers to a preferred embodiment. Naturally, while the principle of the invention remains the same, the details of construction and the embodiments may widely vary with respect to what has been described and illustrated purely by way of the example, without departing from the scope of the present invention.

it passes through the loop under tension and is thus prevented from undergoing macro deformations caused by sideways pulling.

- 5 3. A loop for straps, belts, laces or similar according to one of the previous claims wherein the protuberances (16) are positioned one after the other along the long sides (11, 12) of the loop.
- 10 4. A loop for straps, belts, laces or similar according to one of the previous claims wherein the surface knurlings or protuberances (16) are also substantially ring-shaped and have raised edges and whose function is to locally deform the fixing flap (17) on one side and the strap or belt (18) on the other.
- 15 5. A loop for straps, belts, laces or similar according to one of the previous claims wherein the protuberances (16) prevent the strap (18) on one side and the fixing flap (17) on the other from deforming during sideways movements or pulling and thereby stop the strap and fixing element from moving and modifying the fixing conditions.
- 20 6. A loop for straps, belts, laces or similar according to one of the previous claims wherein the knurling or protuberances (16) can be of any shape or thickness or can be positioned anywhere along the loop side which in turn can be of any shape or cross-section.
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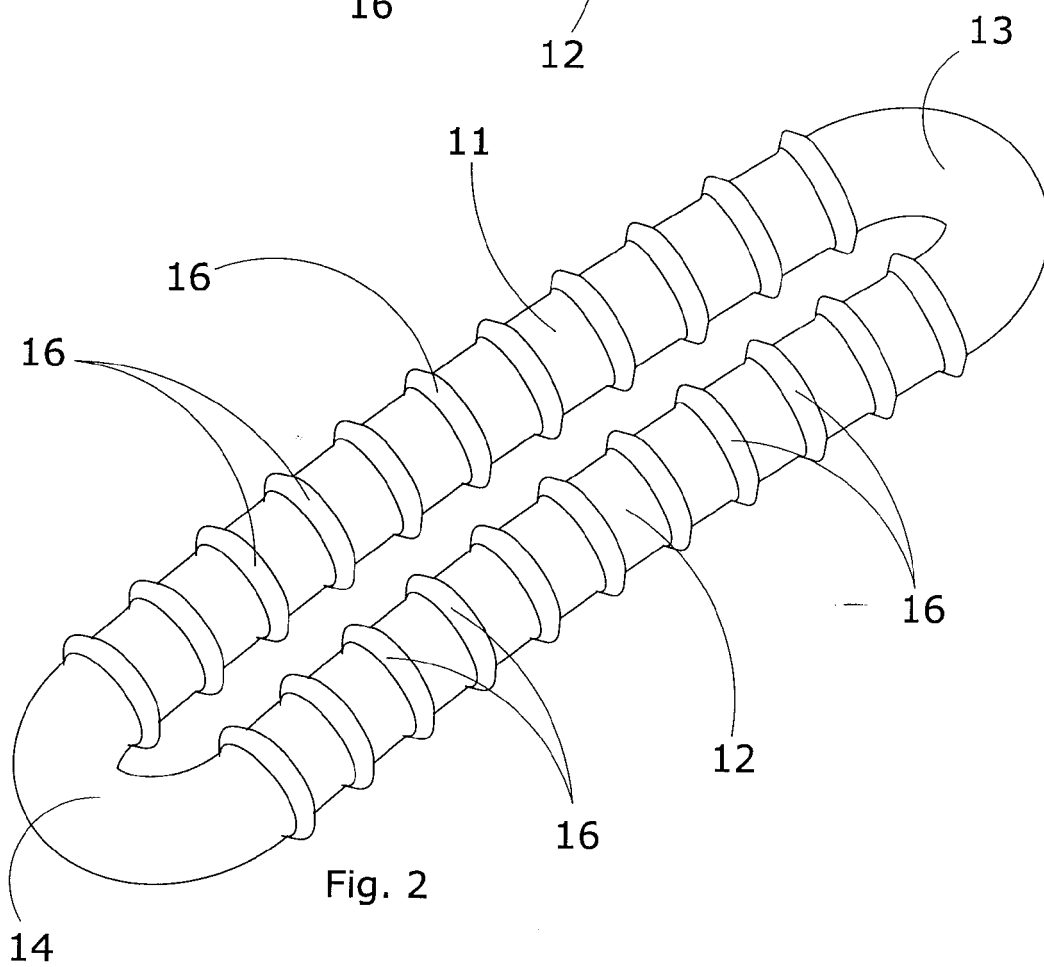
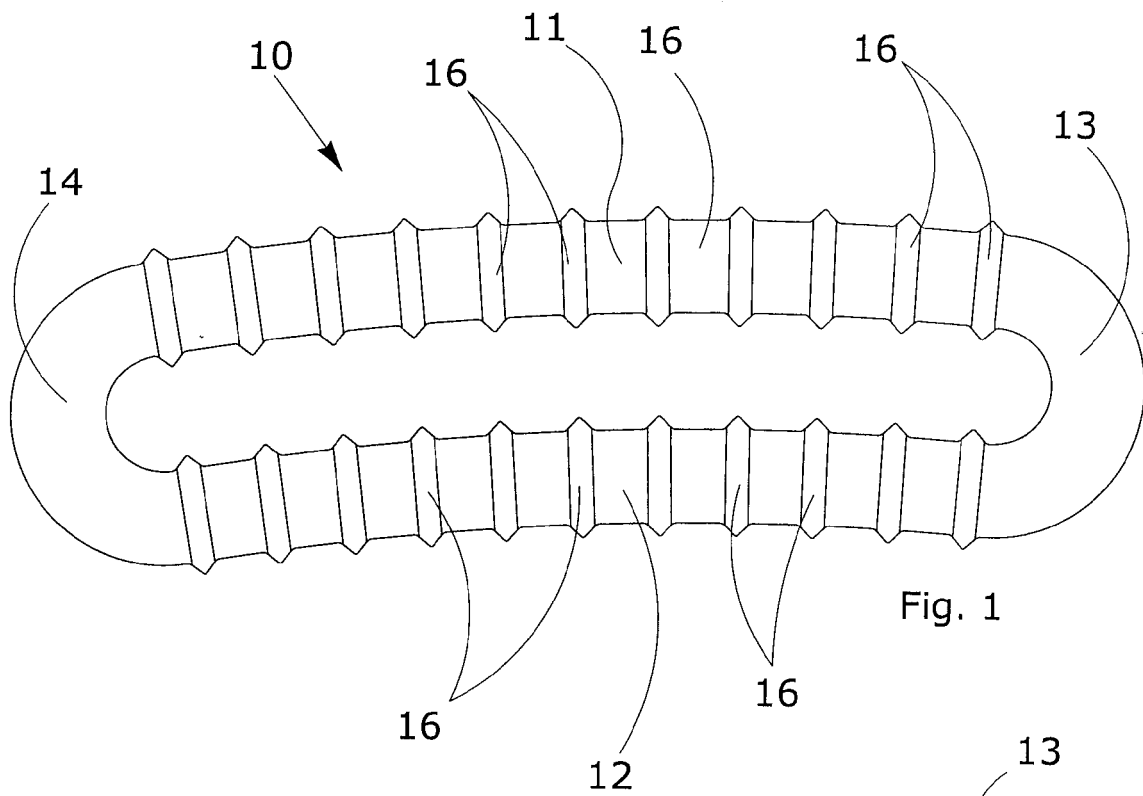
Claims

1. A loop for straps, belts, laces or similar comprising a body (10) made from a substantially plastic, metallic or similar material, with a substantially oblong shape, with sides having a cylindrical, elliptical or similar cross-section wherein the said loop comprises long sides (11, 12) with a plurality of knurlings or protuberances (16) designed to hold the strap in position and prevent it from slipping sideways.
2. A loop for straps, belts, laces or similar according to the previous claim wherein the surface knurling or protuberances (16) locally deform the strap so that

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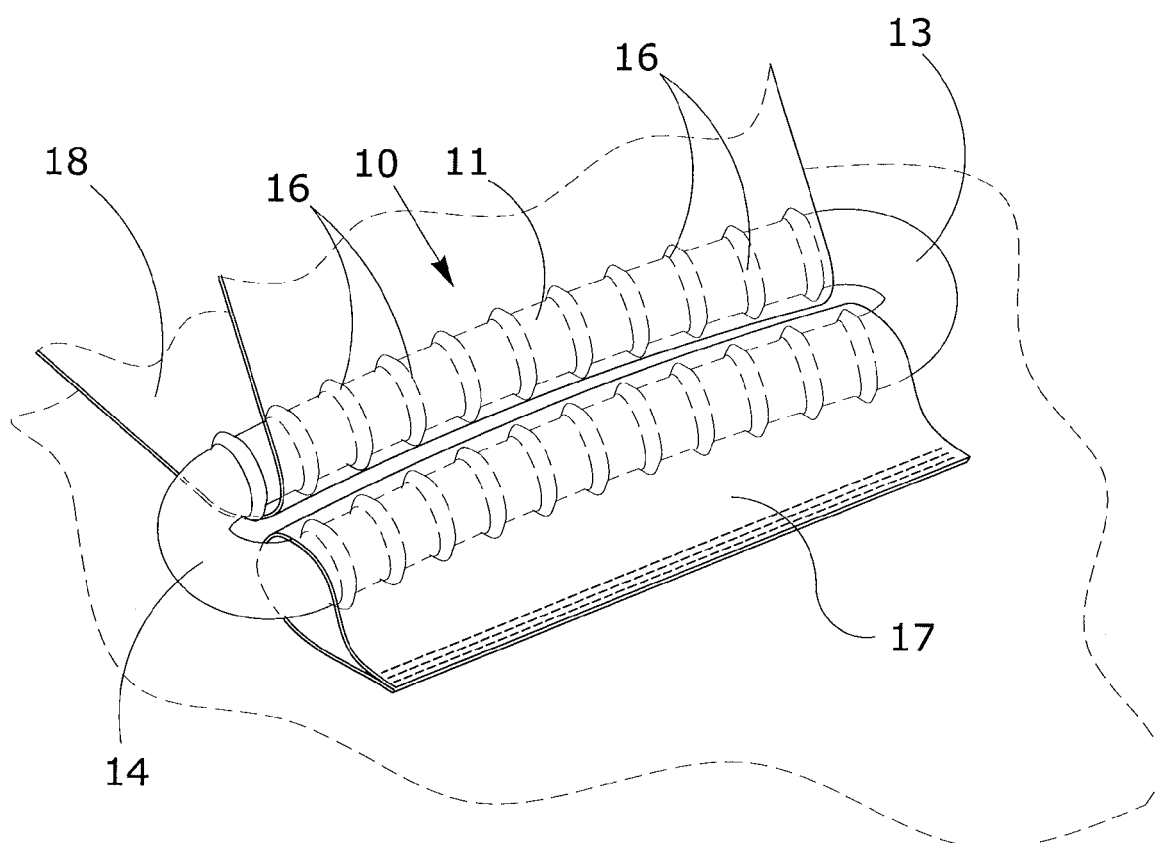


Fig. 3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 15 0462

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	GB 979 996 A (NEWY BROTHERS LTD) 6 January 1965 (1965-01-06) * page 2, line 6 - line 40; figures 1,2,5 *	1-6	INV. A44B11/04 A61F5/01
X	----- US 1 792 290 A (DOMKEE JOHN H) 10 February 1931 (1931-02-10) * the whole document *	1-6	
X	----- US 1 836 923 A (HODGE ROBERT J) 15 December 1931 (1931-12-15) * the whole document *	1-6	
X	----- US 4 117 573 A (NAKAMURA MINORU) 3 October 1978 (1978-10-03) * the whole document *	1,3,6	
X	----- US 3 073 305 A (BIGGS JR ERNEST R ET AL) 15 January 1963 (1963-01-15) * the whole document *	1,2	
A	----- US 6 044 528 A (SCHOTTIN THOMAS M [US]) 4 April 2000 (2000-04-04) * column 3, line 10 - line 18; figures *	4	TECHNICAL FIELDS SEARCHED (IPC) A44B A61F
A	----- EP 0 770 369 A (JOHNSON & JOHNSON PROFESSIONAL [US]) 2 May 1997 (1997-05-02) -----		
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 April 2008	Examiner Squeri, Michele
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)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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08-04-2008

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 979996	A	06-01-1965	NONE	
US 1792290	A	10-02-1931	NONE	
US 1836923	A	15-12-1931	NONE	
US 4117573	A	03-10-1978	NONE	
US 3073305	A	15-01-1963	NONE	
US 6044528	A	04-04-2000	NONE	
EP 0770369	A	02-05-1997	CN 1157131 A	20-08-1997
			JP 9220245 A	26-08-1997