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Lifting strap with wrist support and enhanced gripping properties

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(56) Related Art
US 7004889

ABSTRACT

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Weight lifting strap which is looped around the wrist and wrapped in helical fashion about a weight lifting bar or the like and gripped by the hand with opposite sides of the strap facing the bar and the hand, and the strap being fabricated of a woven material with rubberized strands on the side of the strap which faces the bar.

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Fig. 4

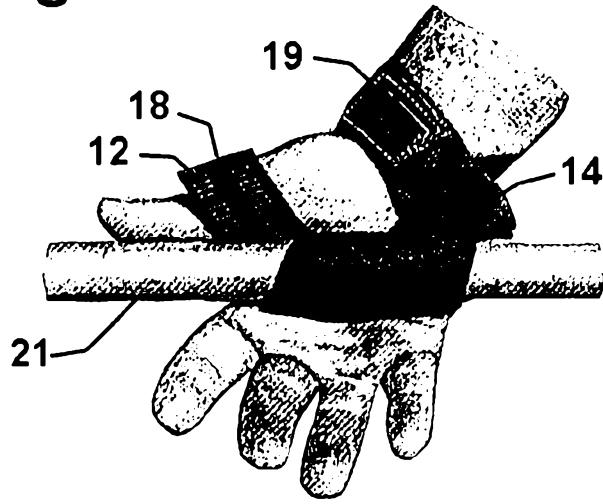


Fig. 5

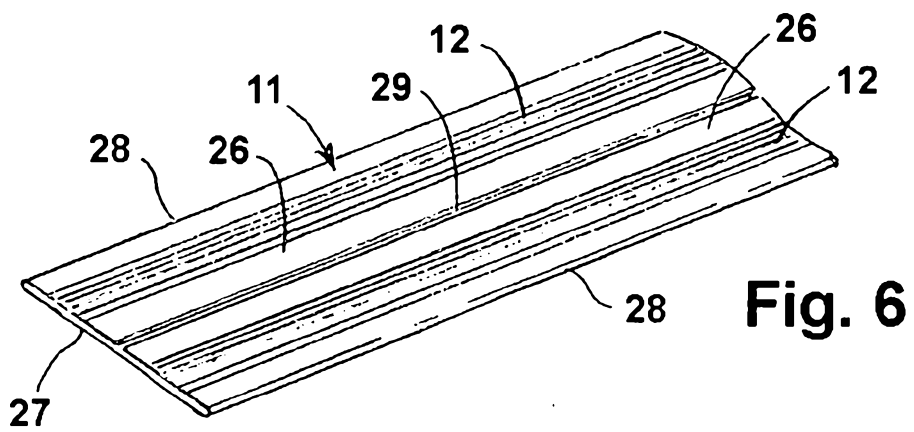
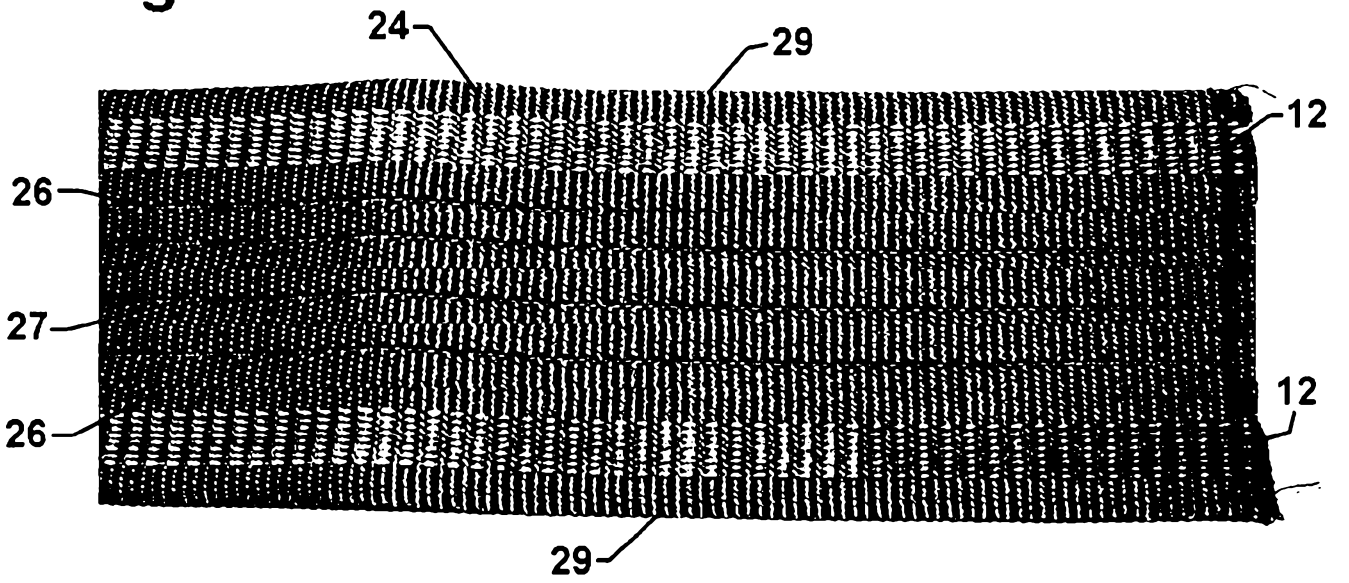


Fig. 6

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Australian Patents Act 1990 – Regulation 3.2

**ORIGINAL COMPLETE SPECIFICATION
STANDARD PATENT**

Invention Title

Lifting strap with wrist support and enhanced gripping properties

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

**LIFTING STRAP WITH WRIST SUPPORT
AND ENHANCED GRIPPING PROPERTIES**

Related Application

5 Continuation-in-part of Serial No. 11/564,118, filed November 28, 2006.

Background of the Invention

Field of Invention

10 This invention pertains generally to weight lifting and fitness equipment and, more particularly, to a strap for improving the grip on such equipment.

Related Art

15 Lifting straps are used as an aid in weight lifting and fitness exercises to improve the user's grip on a bar and to allow him to concentrate on the muscles he wants to exercise rather than the ones which would otherwise be used in gripping the bar. The strap is typically looped about the wrist and then wrapped about the bar where it is gripped by the hand. Examples of such straps are found in U.S. Patents 4,809,974, 5,324,244, 5,745,920 and 7,004,889.

20 **Objects and Summary of the Invention**

The present invention provides a lifting strap which is wrapped in helical fashion about a object and gripped by a hand with opposite sides of the strap facing the object and the hand, the strap being fabricated of a woven material with strands having enhanced gripping properties on the side which faces the object but not on
25 the side which faces the hand.

The present invention also provides a method of using the lifting strap described above, and comprises wrapping the lifting strap in a helical fashion about an object and gripping the lifting strap with a hand such that opposite sides of the lifting strap
30 face the object and the hand with the strands on the side which faces the object but not on the side which faces the hand.

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Brief Description of the Drawings

Figures 1 and 2 are front and rear elevational view of one embodiment of a lifting strap according to the invention.

5 Figure 3 is a fragmentary side elevational view of the embodiment of Figures 1 and 2.

Figure 4 is an isometric view illustrating use of the embodiment of Figures 1 and 2.

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Figure 5 is a fragmentary plan view of a web of woven material from which the embodiment of Figures 1 and 2 is made.

15 Figure 6 is a fragmentary isometric view of the web of Figure 5 being folded to form the embodiment of Figures 1 and 2.

Figures 7 and 8 are top and bottom plan views of another embodiment of a woven material for use in a lifting strap according to the invention.

20 Figures 9 and 10 are enlarged, fragmentary cross-sectional views of the embodiment of Figures 7 and 8.

Figures 11 and 12 are top plan views of another embodiment of a woven material for use in a lifting strap according to the invention.

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Figures 13 and 14 are front and rear elevational views of another embodiment of a lifting strap incorporating the invention.

30 Figures 15 and 16 are isometric views illustrating use of the embodiment of Figures 13 and 14.

Detailed Description

As illustrated in the drawings, lifting strap 11 is woven of a durable, flexible material such as nylon, with strands 12 of a rubberized material in the weave on

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the back side of the strap. At one end of the strap, the end portion 13 is folded back upon itself and stitched to form a loop 14, with the rubberized strands on the inner side of the loop. A label 16 is affixed to the front side of the strap near the loop and, in the embodiment illustrated, is secured to the strap by the same stitches 17 that form the loop.

The strap typically has a length on the order of 20 - 22 inches and a width on the order of 1.5 inches. As illustrated in Figure 4, it is looped about the wrist of a user by passing the free end 18 of the strap through loop 14 to form a larger loop 19 which encircles the wrist, with the free portion of the strap and being wrapped in helical fashion about a weight lifting bar 21, or the like, with the rubberized strands 12 facing the bar.

The rubberized strands extend lengthwise of the strap and provide enhanced gripping properties for the side of the strap which faces the object be gripped. In the embodiment illustrated, the rubberized strands are arranged in two groups 22 of eight strands each, and the two groups are disposed side-by-side and spaced laterally apart along the strap.

In the embodiment of Figures 1 and 2, the strap is made from a web 24 of woven fabric which is approximately twice as wide as the finished strap, with the two groups of rubberized strands 12 in lateral edge portions 26 of the web. The edge portions are approximately one-fourth as wide as the web and half as wide as the finished strap, and they are folded over the central portion 27 of the web along longitudinally extending fold lines 28, with the selvedge edges 29 of the web coming together near the longitudinal centerline of the strap. The folded-over edge portions are secured to the central portion by suitable means such as overweaving or stitching to form a substantially flat two layer strap, with the central portion of the web serving as a base for the layer with the rubberized strands.

Once the two layer structure has been formed, it is cut into lengths for the individual straps, and the raw ends of the individual straps are stitched to prevent them from fraying. One end portion of each strap is then folded over and stitched to itself to form loop 14 and to secure label 16 to the strap.

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5 In the embodiment of Figures 7 and 8, the material is a flat, multi-layer woven fabric with rubberized strands in the top layer only. In this material, four layers of warp strands 31, 32, 33, 34 are woven together in an over-under pattern with a weft strand 36 which is common to all of the layers. As best seen in Figure 9, the two uppermost layers 31, 32 are woven together, as are the two lowermost layers 33, 34. Inner layers 32, 33 are also woven together to form an interlocking structure. Rubberized strands 37 are included in the top layer of warp strands and are woven only with the strands in the second layer. Hence, the rubberized strands are confined to the top layer of the weave and do not go all the way through the material.

15 In this embodiment, rubberized strands 37 are arranged in two groups 38, 38 of eight strands each near the edges 39 of the material.

20 When formed into a lifting strap, the flat interwoven fabric is positioned with the rubberized strands on the back side of the strap. Then, as described above, one end portion of the strap is folded back upon itself and stitched to form a loop, with the rubberized strands on the inner side of the loop, and a label is affixed to the front side of the strap near the loop. This strap is used in the same manner as the embodiment of Figures 1 and 2.

25 The embodiment of Figures 11 and 12 is similar to the embodiment of Figures 7 and 8 except for the number and the location of the rubberized warp strands in the upper layer of the fabric. In this embodiment, the rubberized strands 41 are arranged in groups of three, with non-rubberized strands 42 between the groups, and woven into a diamond shaped pattern in the central portion 43 of the fabric. This material is used in the same manner as the embodiment of Figures 7 and 8 in making a strap, with the rubberized strands on the back side of the strap for engagement with the bar or object to be lifted.

30 In the embodiment of Figures 13 - 14, the lifting strap includes a wrist wrap 46 comprising an elongated band of flexible material such as a nylon web with a cushion or pad 47 of a material such as neoprene toward one end of the band.

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The cushion is on the front side of the band and is attached to the band by stitching 48. A buckle 49 is attached to the end of the band near the cushion, with the end portion of the band being wrapped about one leg of the buckle and stitched to an adjacent portion of the band to secure the buckle.

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Hook and loop fasteners 51, 52 are attached to the back side of wrist band 46 for securing the device about the wrist of a person using it. In the embodiment illustrated, hook fastener 51 is near the free end of the band, and loop fastener 52 is behind the cushion, with the loop faster being longer than the hook fastener so that the hook fastener can be engaged with different portions of the loop fastener to accommodate wrists of different sizes.

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A grip strap 54 extends from the upper side of cushion 47. This strap is similar in structure to strap 11 in the embodiment of Figures 1 and 2, and consists of an elongated length of flexible fabric 56, such as nylon, with rubberized strands 57 woven into the fabric on the front side of the strap. Alternatively, strap 54 can be similar in structure to the embodiment of Figures 7 and 8 or the embodiment of Figures 11 and 12, or it can be of other suitable structure with enhanced gripping properties on one side of the strap. In the embodiment illustrated, the proximal end portion of the strap is disposed between the back side of cushion 47 and the front side of wrist band 46 and is affixed to the wrist band and cushion by stitching 59.

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In use, the wrist wrap is positioned about the wrist as illustrated in Figure 15, with cushion 37 on the front or palm side of the wrist, buckle 48 on the outer side, and grip strap 54 extending along the palm and fingers of the hand. The free end of wrist band 36 is passed through the buckle, folded back over the remainder of the band and pulled to tighten the wrap snugly about the wrist. The free end portion is pressed against the portion of the band behind the cushion to engage the hook portion 51 of the fastener with the loop portion 52 and thereby secure the device in place.

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Then, as illustrated in Figure 16, the free portion of grip strap 54 is wrapped in helical fashion about bar 61 or object to be lifted, with the rubberized strands 57

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facing the bar. When the object is lifted, the weight of the object is transferred to the wrist, and the padded wrist wrap provides both support and cushioning for the wrist during lifting.

5 The invention has a number of important features and advantages. The rubberized strands facing the bar provide enhanced gripping properties with better control and greater safety in the lifting of heavier weights.

10 It is apparent from the foregoing that a new and improved lifting strap has been provided. While only certain presently preferred embodiments have been described in detail, as will be apparent to those familiar with the art, certain changes and modifications can be made without departing from the scope of the invention as defined by the following claims.

15 Throughout this specification and the claims which follow, unless the context requires otherwise, the word "comprise", and variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

20 The reference in this specification to any prior publication (or information derived from it), or to any matter which is known, is not, and should not be taken as an acknowledgment or admission or any form of suggestion that that prior publication (or information derived from it) or known matter forms part of the
25 common general knowledge in the field of endeavour to which this specification relates.

The reference numerals in the following claims do not in any way limit the scope of the respective claims.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A lifting strap which is wrapped in helical fashion about a object and gripped by a hand with opposite sides of the strap facing the object and the hand, the strap
5 being fabricated of a woven material with strands having enhanced gripping properties on the side which faces the object but not on the side which faces the hand.
2. The lifting strap of Claim 1 wherein the woven material is nylon.
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3. The lifting strap of Claim 1 wherein the strands having enhanced gripping properties are rubber.
4. The lifting strap of Claim 1 or Claim 2 wherein the strands having enhanced
15 gripping properties extend lengthwise of the strap.
5. The lifting strap of any of the preceding claims wherein the strands having enhanced gripping properties are arranged in two groups disposed toward opposite edges of the strap.
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6. The lifting strap of any of the preceding claims wherein one end portion of the strap is folded back upon itself to form a loop with the strands having enhanced gripping properties on the inner side of the loop, and the remainder of the strap passing through the loop to form a larger loop which encircles the wrist,
25 with a second end portion of the strap extending from the loop and being wrapped about the object.
7. The lifting strap of Claim 6 including a label affixed to the strap near the loop and on the side of the strap without the strands having enhanced gripping
30 properties.

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8. The lifting strap of any of the preceding claims wherein the strap has two superposed layers, with the strands having enhanced gripping properties being woven into only one of the layers.

5 9. The lifting strap of any of the preceding claims wherein the strap is formed from a web of fabric having two groups of strands having enhanced gripping properties woven therein, with one portion of the web being folded over another to form a two layer structure with the two groups of strands having enhanced gripping properties disposed side by side in one of the layers.

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10. The lifting strap of Claim 9 wherein the strands having enhanced gripping properties are woven into edge portions of the web, and the edge portions are folded over a central portion.

15 11. The lifting strap of any of the preceding claims including a padded wrist wrap which encircles the wrist, with the strap extending from the wrist wrap and being wrapped about the object gripped by the person with the strands having enhanced gripping properties facing the object.

20 12. The lifting strap of Claim 11 wherein the wrist wrap comprises an elongated band of flexible material which encircles the wrist and a cushion on one side of the band for engagement with the front side of the wrist.

25 13. The lifting strap of Claim 12 wherein the strap extends from the cushion toward the palm and fingers and toward the object.

14. The lifting strap of Claim 12 or Claim 13 wherein a proximal end portion of the strap extends between the wrist band and the cushion and is secured by stitching.

15. The lifting strap of any of Claims 11 - 14 including a buckle affixed to one end of the wrist band, hook and loop fasteners affixed to one side of the wrist band to secure the band about the wrist with a portion of the band being passed through the buckle and folded back upon itself and secured by the fasteners.

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16. The lifting strap of Claim 15 wherein the buckle is positioned on the outer side of the wrist.

17. The lifting strap of any of the preceding claims wherein the strap comprises an elongated web of woven fabric having a plurality of layers of warp strands which are woven together to form an interlocking structure in which the strands in adjacent ones of the layers are woven together with a weft strand, with strands having enhanced gripping properties in an outermost layer to provide enhanced gripping properties on one side of the strap.

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18. The lifting strap of Claim 17 wherein the fabric includes a first layer of warp strands in which the strands having enhanced gripping properties are included, a second layer of warp strands below the first layer, a third layer of warp strands below the second layer, and a fourth layer of warp strands below the third layer, with the warp strands in the first and second layers being woven together, the warp strands in the second and third layers being woven together, and the warp strands in the third and fourth layers being woven together.

19. A method of using a lifting strap as claimed in any preceding claim, wherein the lifting strap is fabricated of a woven material with strands having enhanced gripping properties on one side thereof, wherein the method comprises wrapping the lifting strap in a helical fashion about an object and gripping the lifting strap with a hand such that opposite sides of the lifting strap face the object and the hand with the strands on the side which faces the object but not on the side which faces the hand.

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20. A lifting strap substantially as hereinbefore described with reference to the drawings and/or Examples.

Fig. 1

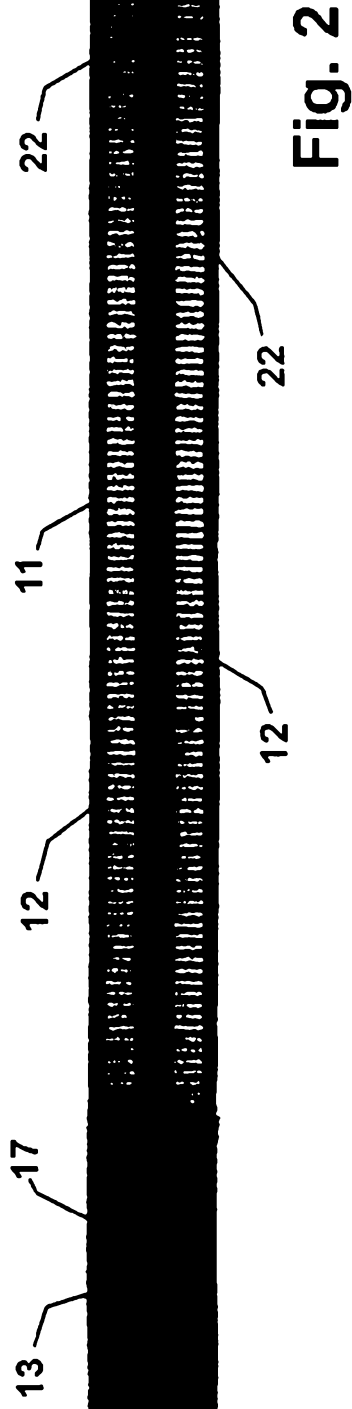
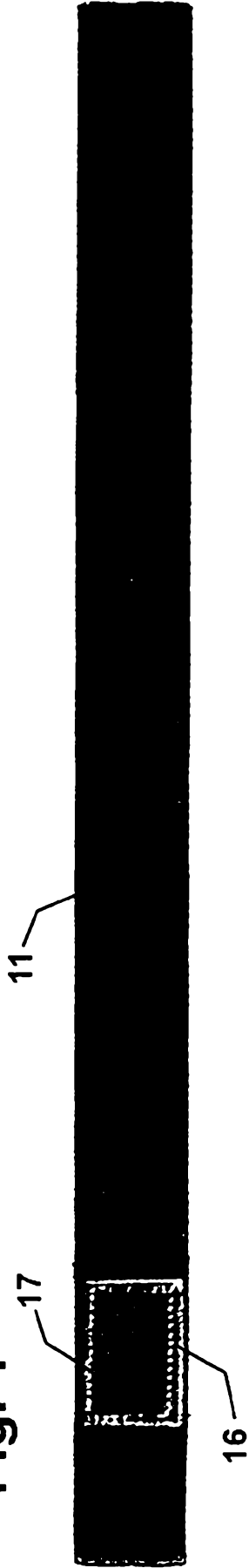


Fig. 2

Fig. 3

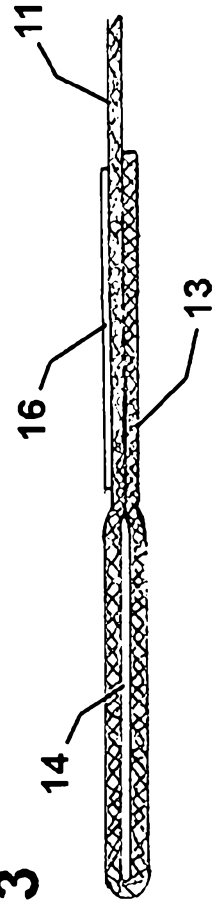


Fig. 4

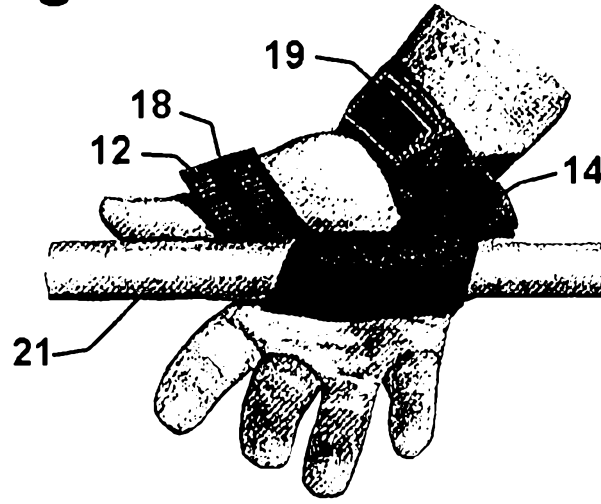


Fig. 5

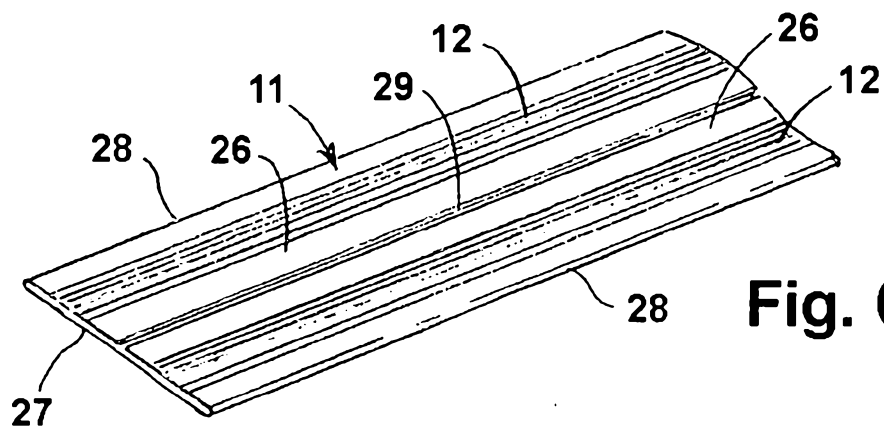
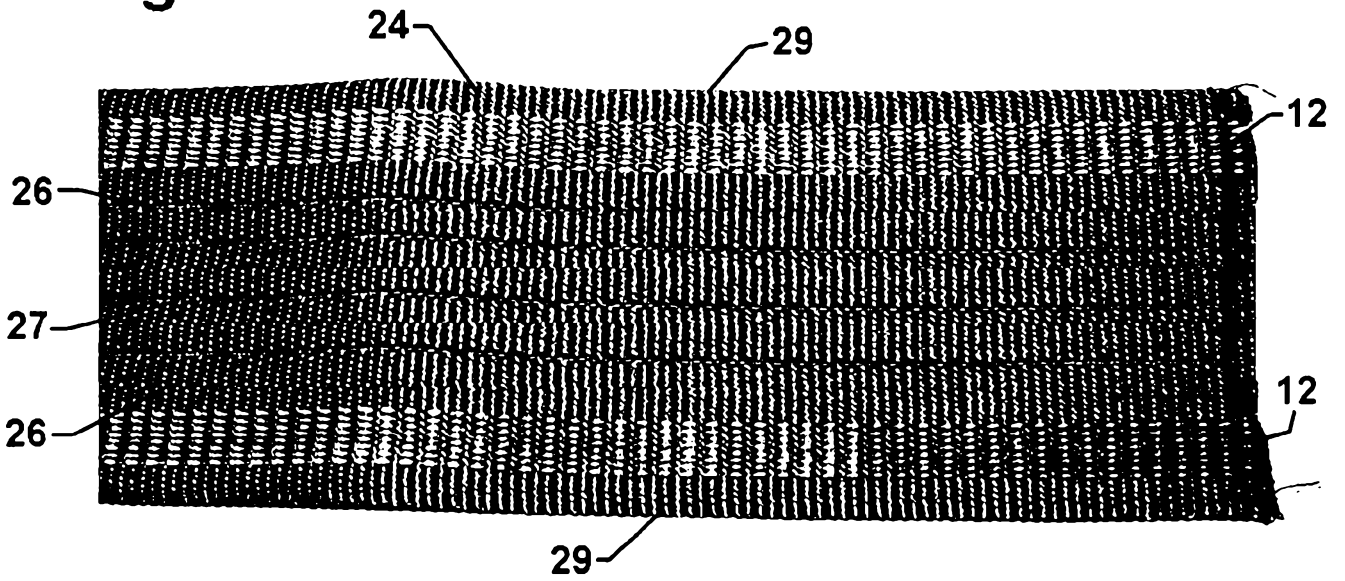


Fig. 6

Fig. 7

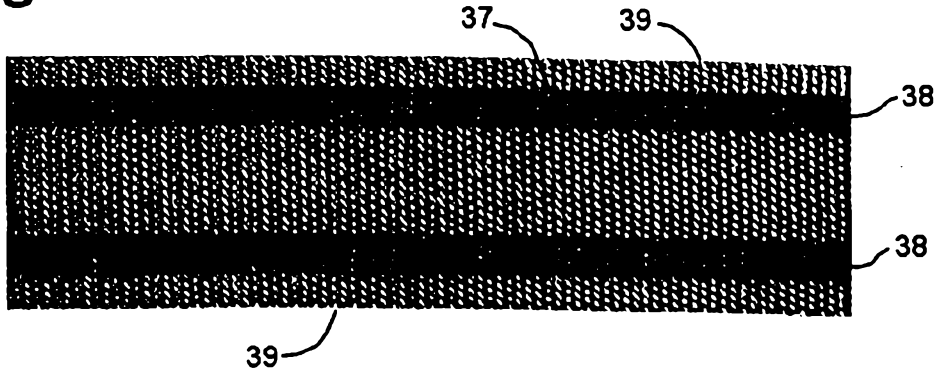


Fig. 8

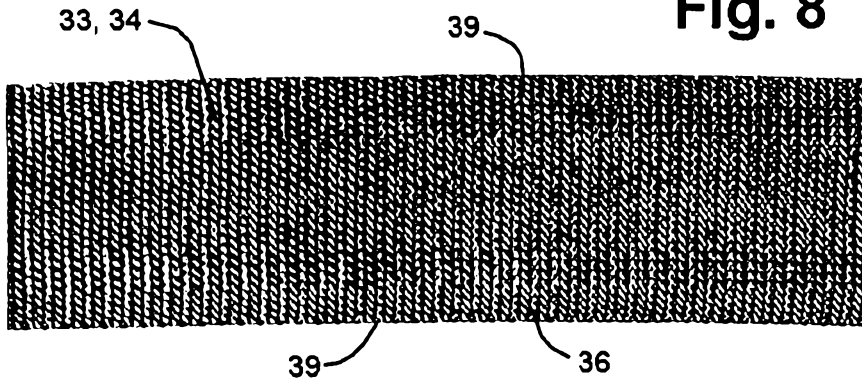


Fig. 9

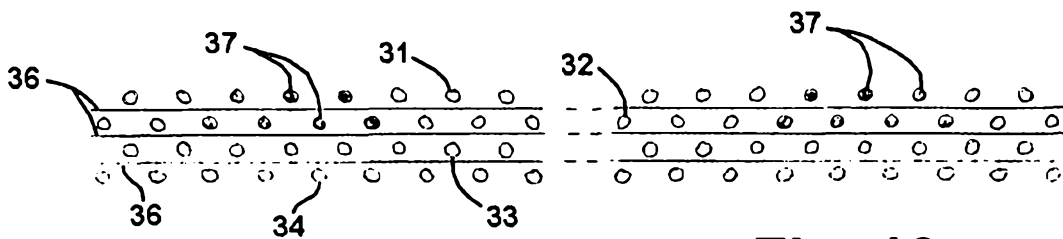
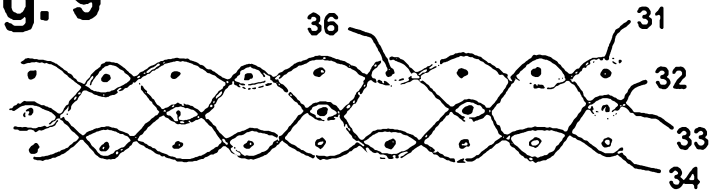


Fig. 10

Fig. 11

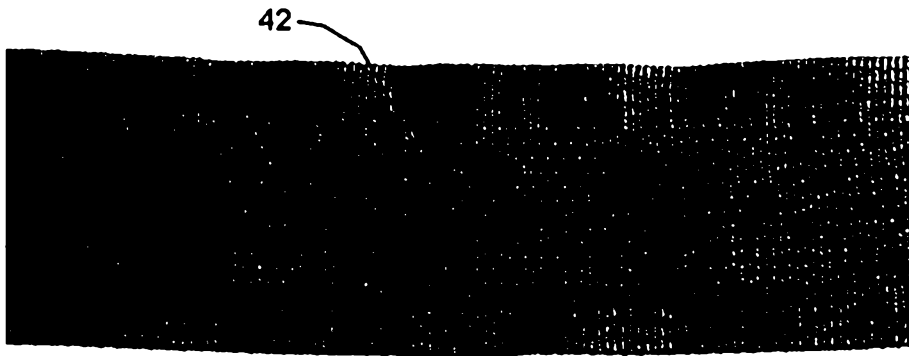
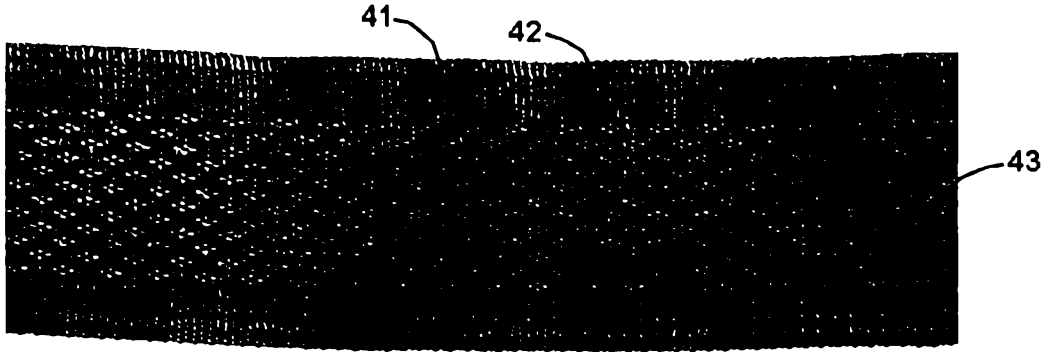


Fig. 12

Fig. 13

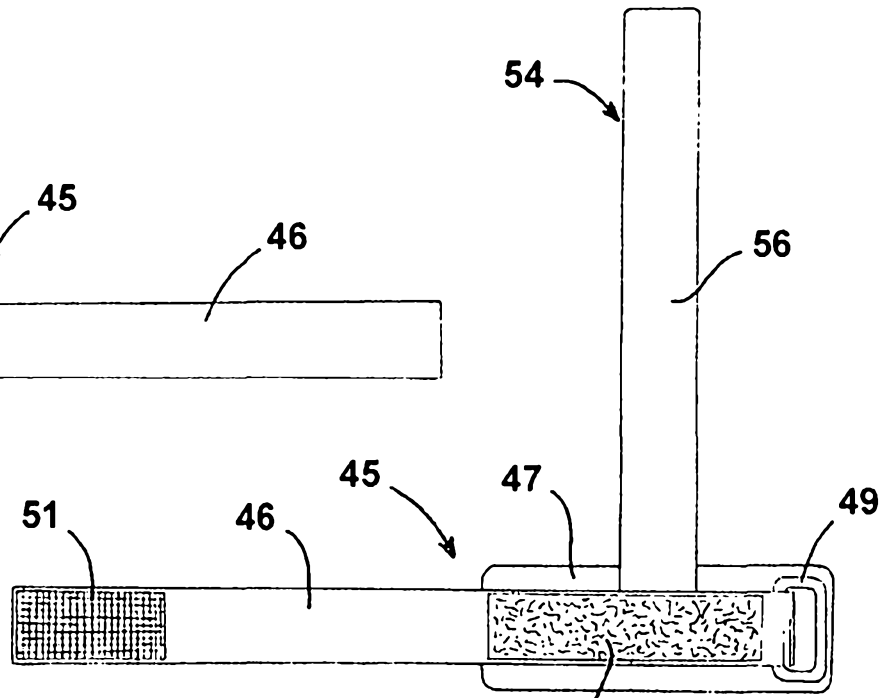
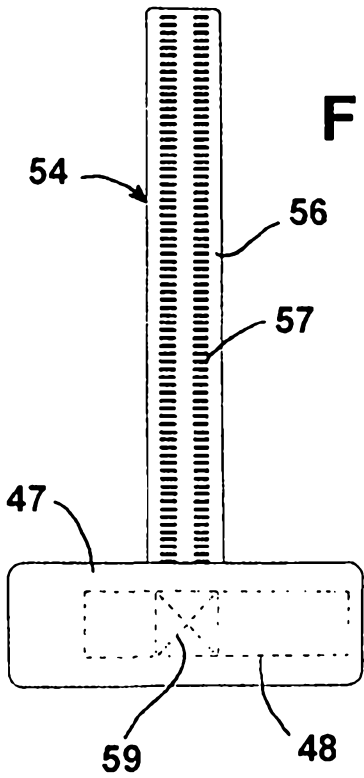


Fig. 14

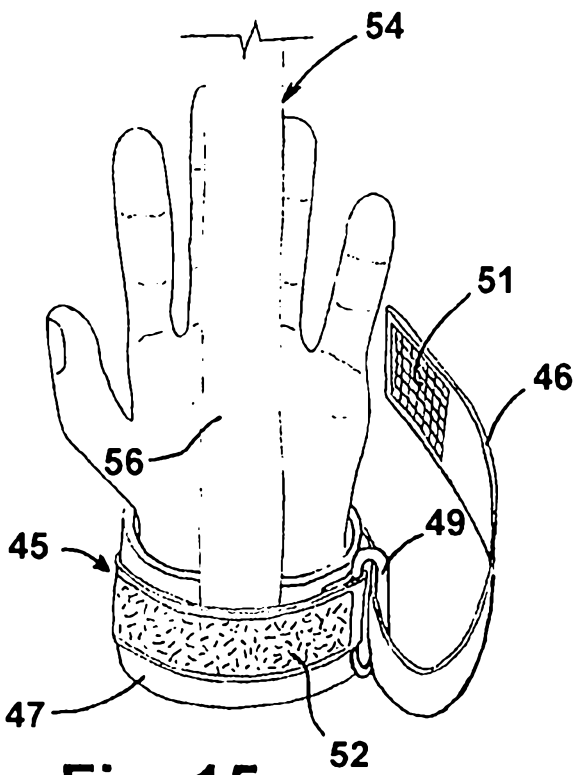


Fig. 15

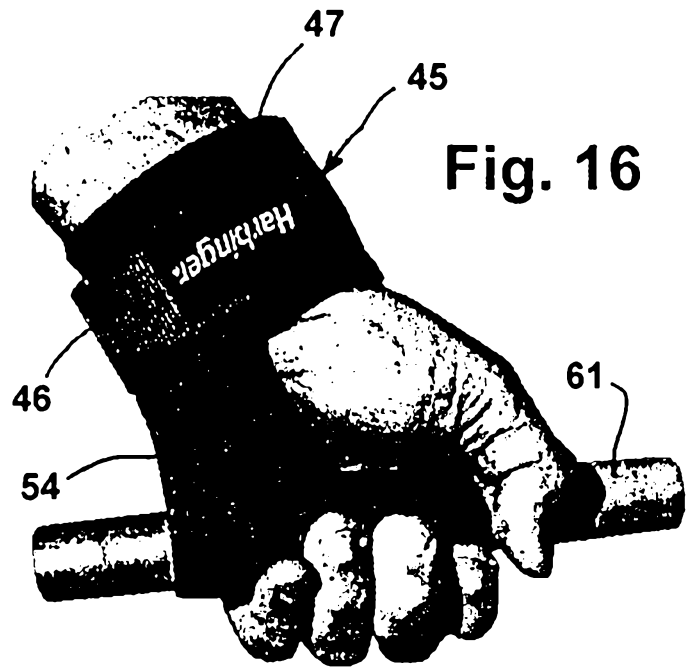


Fig. 16