



(11) **EP 2 762 621 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
06.08.2014 Bulletin 2014/32

(51) Int Cl.:
D04B 33/00 (2006.01)

(21) Application number: **14153804.1**

(22) Date of filing: **04.02.2014**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME

(72) Inventor: **Smelcer, Teresa D**
Mount Juliet, TN Tennessee 37122 (US)

(74) Representative: **Lawrence, John**
Barker Brettell LLP
100 Hagley Road
Edgbaston
Birmingham
B16 8QQ (GB)

(30) Priority: **05.02.2013 US 201361761091 P**

(71) Applicant: **Wilton Industries, Inc.**
Woodridge,
Illinois 60517 (US)

(54) **Straight shaft latch needle**

(57) A sewing needle (101) for use in crocheting and the like. The needle (101) has a shaft (110) with a hook

(120). The shaft (110) is straight and includes a handle (105).

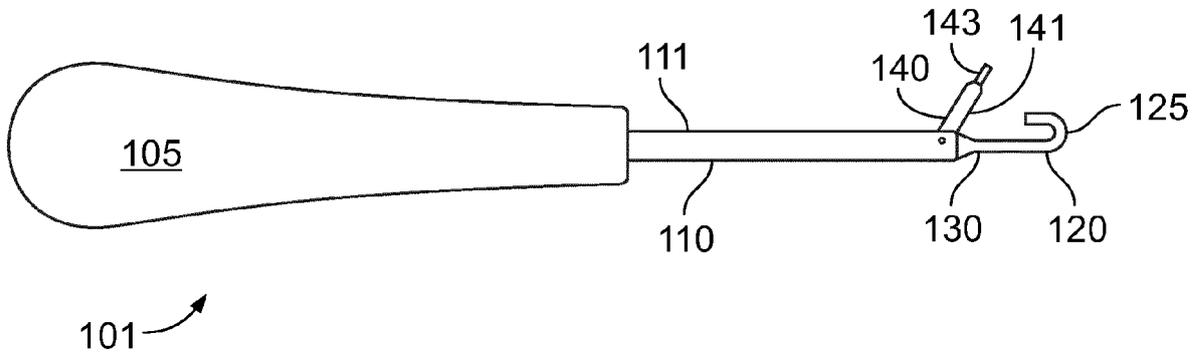


FIG. 1

EP 2 762 621 A1

Description**CROSS REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims priority to U.S. Provisional Application No. 61/761,091 filed February 5, 2013, incorporated by reference herein in its entirety.

FIELD OF THE INVENTION

[0002] The present invention generally relates to crocheting.

BACKGROUND OF THE INVENTION

[0003] Crocheting with different types of yarn may present unique challenges. Existing needles do not work well with open weave yarns. For example, traditional curved shaft hooks are difficult to utilize in making scarfs.

SUMMARY OF THE INVENTION

[0004] One embodiment of the invention relates to a straight shaft latch hook

[0005] Additional features, advantages, and embodiments of the present disclosure may be set forth from consideration of the following detailed description, drawings, and claims. Moreover, it is to be understood that both the foregoing summary of the present disclosure and the following detailed description are exemplary and intended to provide further explanation without further limiting the scope of the present disclosure claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The foregoing and other objects, aspects, features, and advantages of the disclosure will become more apparent and better understood by referring to the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is an illustration of a side view a straight shaft latch hook.

Figure 2 is an illustration of a top view of a straight shaft latch hook.

Figure 3 is an illustration of a side view a straight shaft latch hook indicating the pin chamber in the shaft.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0007] In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates oth-

erwise. The illustrative embodiments described in the detailed description, drawings, and claims are not meant to be limiting. Other embodiments may be utilized, and other changes may be made, without departing from the spirit or scope of the subject matter presented here. It will be readily understood that the aspects of the present disclosure, as generally described herein, and illustrated in the figures, can be arranged, substituted, combined, and designed in a wide variety of different configurations, all of which are explicitly contemplated and made part of this disclosure.

[0008] In one embodiment, a crocheting needle 101 is provided. The crocheting needle 101 has a shaft 110. The illustrated embodiment has a substantially straight shaft 110 rather than a bent shaft. In one embodiment, the shaft 110 is straight, that is linear within manufacturing tolerances. The straight shaft 110 allows yarn (not shown) to slide on and off the shaft 110 in a smooth transition. This is particularly useful for techniques using open weave yarn. For example, open weave yarn can be used with this needle 101 for making scarfs in a manner different from knitting and crochet.

[0009] One embodiment the needle 101 includes a handle 105. The shaft 110 extends from the handle 105. In one embodiment, the shaft 110 protrudes from the handle 105 and includes a portion (not shown) that is embedded in the handle and an exposed portion 111 that extends outside of the handle 105 for engaging the yarn. The straight shaft 110 includes opposite the handle a hook 120. Preferably, the hook 120 and/or shaft 110 are made from metal, but may be made from any suitable material such as, but not limited to plastic and wood. In one embodiment, the shaft 110 and hook 120 are one unitary piece. Plastic would not be as strong as metal and could break easily with extended use. Two areas that would be vulnerable to breakage are the hook and the point at which the shaft is attached to the handle.

[0010] In one embodiment, the hook is a curved cylindrical component. As shown in the Figures, the shaft 110 may also be, in one embodiment, a cylindrical component. The shaft 110, as illustrated, has a larger diameter than that of the hook 120. A tapering portion 130 provides a transition from the larger diameter shaft 110 to the smaller diameter hook 120. In the illustrated embodiment, the hook has a radius of curvature of about 0.05 inches (1.27mm), preferably about 0.046 inches (1.17mm). The hook 120 defines a throat 125 of the hook 120. The hook 120 may be in line with the shaft 110 or may be not in line with the shaft 110, such as shown in Figures 1 and 3. The hook curves from the shaft 110 back towards the handle 105.

[0011] In one embodiment, a pin 140 is movably attached to the shaft 110. The pin 140 forms a latch to secure the throat, forming what is known as a "latch needle". The pin 140 includes a pin shaft 141 having a pin hinge 142. The pin shaft 141 may include a pin shaft taper portion 143 that has a reduced thickness, such as a reduced diameter. In one embodiment, the pin shaft

141 is attached to the shaft 110 via the pin hinge 142 and is rotatable to effectively close the throat 125 of the hook 120. In the illustrated embodiment of Figure 3, a pin chamber 146 is indicated. The pin chamber 146 is a recessed portion within the shaft 110 into which all or substantially all of the pin 140 is disposable. As illustrated in the Figures, best shown in Figure 2, the pin 140 is in the same plane as defined by the hook 120 and the shaft 110 to allow the pin 140 to rotate to engage the hook 120 and, for embodiments with a pin chamber 146, to be stowed in the pin chamber 146. In one embodiment, the pin 140 is collinear with the shaft 110 when disposed in the pin chamber 146.

[0012] The foregoing description of illustrative embodiments has been presented for purposes of illustration and of description. It is not intended to be exhaustive or limiting with respect to the precise form disclosed, and modifications and variations are possible in light of the above teachings or may be acquired from practice of the disclosed embodiments. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

Claims

1. A needle comprising:
 - a substantially straight shaft having a handle at one end and a hook at another end;
 - the hook forming a throat.
2. The needle of claim 1, further comprising a pin.
3. The needle of claim 2, wherein the pin comprises a pin shaft hingedly connected to the shaft by a pin hinge and further wherein the pin is configured to rotate to close the throat.
4. The needle of claim 3, further comprising a pin chamber recessed in the shaft; the pin chamber configured to receive the pin.
5. The needle of claim 4, wherein the pin is collinear with the shaft when disposed in the pin chamber.
6. The needle of claim 4 or claim 5, wherein the pin is rotatable in a plane defined by the hook and shaft.
7. The needle of claim 1 or of any preceding claim, wherein the hook has a radius of curvature of about 0.05 inches (1.27mm).
8. A latch needle comprising:
 - a handle;
 - a shaft extending from the handle, the shaft be-

- ing straight and terminating opposite the handle with a hook;
- the hook curving from the shaft back towards the handle;
- a throat formed by the hook;
- a pin hingedly secured to the shaft adjacent the hook such that the pin, in one position, extends from the shaft to the hook.

9. The needle of claim 8, wherein the pin comprises a pin shaft hingedly connected to the shaft by a pin hinge and further wherein the pin is configured to rotate to close the throat.
10. The needle of claim 9, further comprising a pin chamber recessed in the shaft; the pin chamber configured to receive the pin.
11. The needle of claim 10, wherein the pin is collinear with the shaft when disposed in the pin chamber.
12. The needle of claim 10 or of claim 11, wherein the pin is rotatable in a plane defined by the hook and shaft.
13. The needle of claim 8 or of any of claims 9 to 12, wherein the hook has a radius of curvature of about 0.05 inches (1.27mm).
14. A method of crocheting comprising; weaving open weave yarn with a straight shaft latch needle.

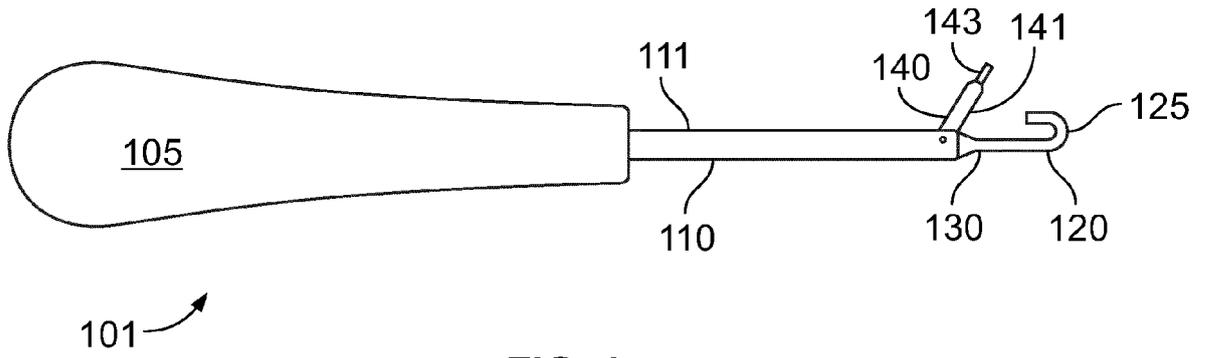


FIG. 1

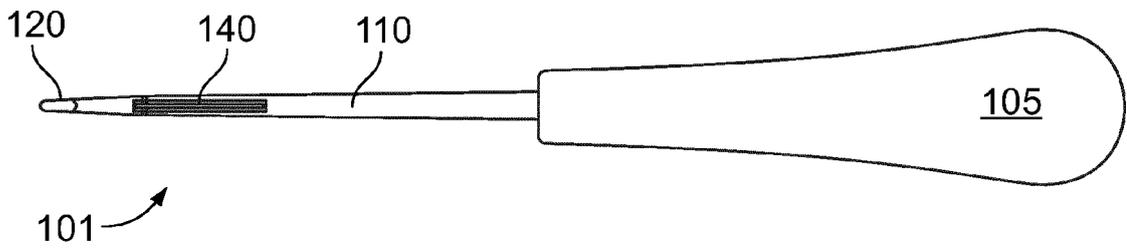


FIG. 2

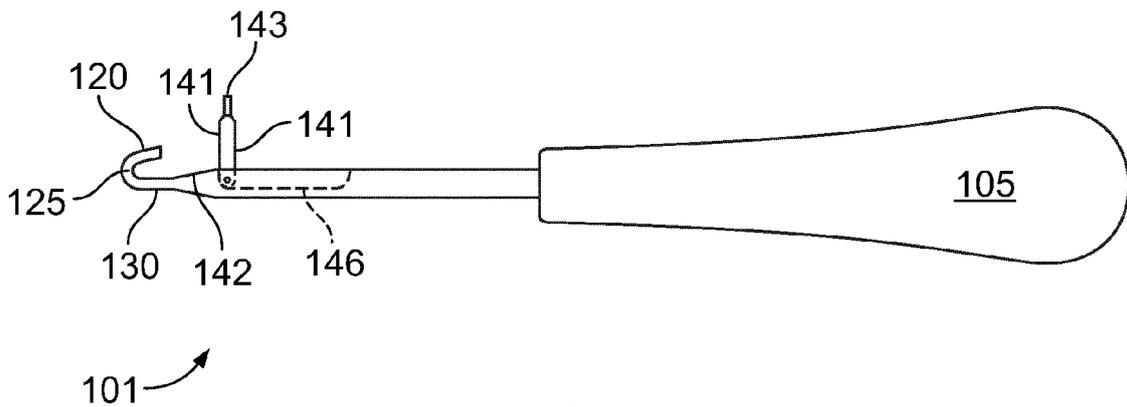


FIG. 3



EUROPEAN SEARCH REPORT

Application Number
EP 14 15 3804

5

10

15

20

25

30

35

40

45

50

55

| 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 1 709 631 A (SCHMIDT HUBERT R) 16 April 1929 (1929-04-16) | 1-4,6, 8-10,12 | INV. D04B33/00 |
| Y | * page 1, line 42 - line 58; figures 1-3 * * page 1, lines 4-6, 93-97 * ----- | 5,11 | |
| Y | US 757 378 A (WOODWARD CHARLES RICHARD [GB]) 12 April 1904 (1904-04-12) * page 1, line 37 - line 43; figures 1,4 * ----- | 5,11 | |
| X | US 1 045 163 A (MERROW JOSEPH M [US]) 26 November 1912 (1912-11-26) * page 1, lines 13-36; figures 1,8 * ----- | 14 | |
| The present search report has been drawn up for all claims | | | TECHNICAL FIELDS SEARCHED (IPC) |
| | | | D04B |
| Place of search | | Date of completion of the search | Examiner |
| Munich | | 13 June 2014 | Kirner, Katharina |
| 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 | |

1
EPO FORM 1503 03 82 (P04C01)

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

EP 14 15 3804

5

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

13-06-2014

10

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|--|---|------------------|-------------------------|------------------|
| US 1709631 | A | 16-04-1929 | NONE | |
| ----- | | | | |
| US 757378 | A | 12-04-1904 | NONE | |
| ----- | | | | |
| US 1045163 | A | 26-11-1912 | NONE | |
| ----- | | | | |

15

20

25

30

35

40

45

50

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

55

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 61761091 A [0001]