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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: FISHING CONNECTOR

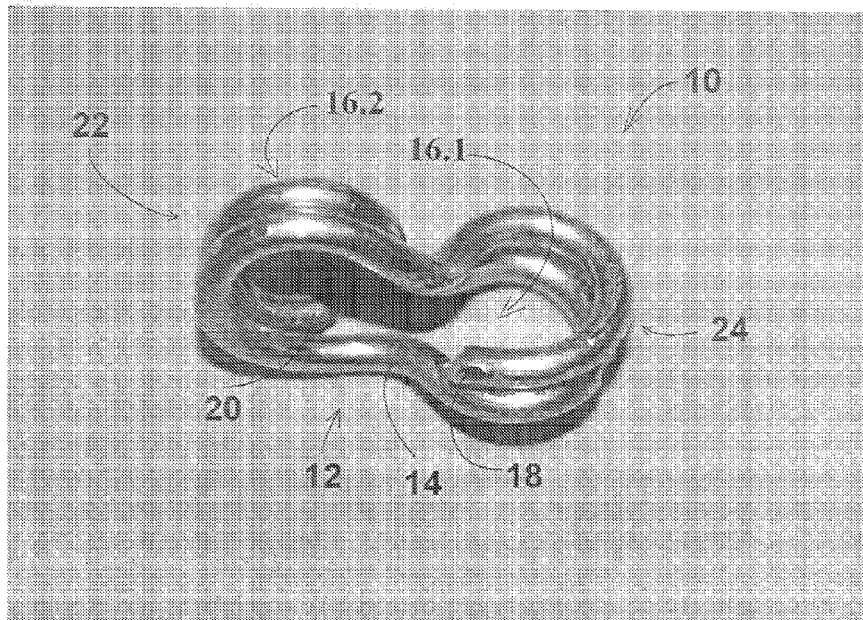


Figure 1

(57) Abstract: According to the invention there is provided a connector which (10) includes an elongate member (12) shaped to form a loop that defines a pair of retaining zones (16.1, 16.2) wherein articles to be connected can be retained, and which retaining zones are arranged out of plane relative to each other.



FISHING CONNECTOR

Technical Field of the Invention

5 This invention relates to an accessory for connecting fishhooks and lures in a preferred orientation relative each other.

Background to the invention

10 The inventor is aware of split rings, cross-lock and coast-lock snaps used in arrangements of fishhooks, fishing lines, sinkers, lures or similar fishing paraphernalia. Fishing snaps and split rings currently available in the art have all features arranged in a single plane. Often such arrangements also make use of a swivel in order to allow free rotation of connected items attached to a line, lure
15 or sinker in use.

 A common practice is to attach treble hooks to trolling lures, through the use of a split ring. However, when a single hook is attached to a lure in a similar fashion it results in disorientation of the hook relative to the lure. In order to
20 arrange a single hook in a preferred orientation relative the lure, an additional split ring is inserted which corrects the aspect of a single hook relative to the fishing lure. The use of multiple split rings has been known to cause tangles and interfere with the swimming action of various lures.

25 It is an object of the invention to provide an alternative to existing fishhook and lure arrangements in order to overcome at least some of the difficulties identified above.

Summary of the invention

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 According to the invention there is provided a connector which includes:

an elongate member shaped to form a loop that defines a pair of retaining zones wherein articles to be connected can be retained, and which retaining zones are arranged out of plane relative to each other.

5 The elongate member may take the form of a wire strand, and the connector may be made by bending a single wire strand into a substantially circular overlapping unit and thereafter bending opposing arcuate ends of the unit out of plane relative each other. The wire may be bent such that the end regions overlap a substantial length of the wire strand. The wire may be bent such that
10 the end regions overlap at least a portion of the length of the wire strand. The wire strand may be manufactured from any suitable metallic material, which may include spring steel.

The connector may take the form of a split ring with opposing sides
15 twisted relatively out of plane in order to define two out of plane receiving zones such that articles received within one receiving zone are relatively rotated to articles received within the other receiving zone. The out of plane receiving zones may be twisted relative each other so as to define a general figure of eight.

20 **Specific description of the invention**

The invention is now described by way of example with reference to the accompanying drawings.

25 In the drawings:

Figures 1 and 2 show photographic representations of a connector, in accordance with one aspect of the invention.

Referring now to Figures 1 and 2, the connector, in accordance with the
30 invention, is generally indicated by reference numeral 10.

The connector 10 includes a elongate member 12 comprising a single wire strand 14 that is bent to form a loop, thereby defining a pair of retaining zones 16.1 and 16.2 wherein articles (not shown) to be connected can be retained.

For the embodiment shown the wire is bent such that there is extensive overlap between the first wire end 18, the second wire end 20 and the rest of the wire 14.

5 The connector 10 has a first arcuate end 22 and an opposing second arcuate end 24 that are arranged in the region of 90 degrees, ie orthogonally, out of plane relative to each other. This relative rotation of the arcuate ends 22, 24 allows articles (not shown) that are received in the first retaining zone 16.1 to be rotated relative to the articles received within the second retaining zone 16.2.

10 In use articles to be connected (not shown) are threaded onto the connector 10 at one of the end regions 18 or 20 of the wire strand 14. Either wire end 18 or 20 is forced away from the rest of the wire 14 loop, whereafter the article is slid along the wire 14 until it is received within either retaining zone 16.1 or 16.2, thereby joining any number of articles retained in a similar fashion.

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It is to be appreciated that not only does the connector 10 allow for relative rotation of various connected articles, but a further advantage of this embodiment includes that it is, in part, of reduced diameter compared to traditional split ring connectors. Traditional split rings have a constant diameter when viewed in plan, and the embodiment shown has a comparatively reduced planar diameter, at the cost of increasing the height profile of the split ring as viewed from the side.

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This connector will typically be used in fishing in order to connect 25 fishhooks to fishing lures and thereby providing a preferred orientation of the hook relative the lure.

It shall be understood that the examples are provided for illustrating the invention further and to assist a person skilled in the art with understanding the 30 invention and are not meant to be construed as unduly limiting the reasonable scope of the invention.

DATED THIS DAY OF DECEMBER 2014.

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CLAIMS

- 1 A connector which includes:
5 an elongate member shaped to form a loop defining a pair of retaining zones for retaining articles therein, and wherein the retaining zones are arranged out of plane relative to each other.
- 10 2 A connector as claimed in claim 1 wherein the retaining zones are arranged substantially orthogonally relative to each other.
- 3 A connector as claimed in claim 1 or 2 wherein the elongate member overlaps itself in the region of the retaining zones.
15
- 4 A connector as claimed in claim 3 wherein the elongate member is manufactured from any suitable resiliently deformable material.
- 5 A connector as claimed in claim 4 wherein the resiliently deformable
20 material includes a suitable metallic material.
- 6 A connector as claimed in claim 5 wherein the metallic material includes conventional spring steel.
- 25 7 A connector as claimed in claim 6 wherein the elongate member is in the form of a wire.
- 8 A connector, wherein the connector is in the form of a conventional split ring which is deformed so as to form a pair of retaining lobes which
30 generally describes the outline of a figure of eight.
- 9 A connector as claimed in claim 8 wherein the retaining lobes are orientated out of plane relative to each other so as to define two out of plane retaining zones for retaining articles therein.

- 10 A connector as claimed in claim 9 wherein the retaining zones are arranged substantially orthogonally relative to each other.
- 5 11 A connector as claimed in any one of claims 9 or 10 wherein an article retained within one retaining zone is rotated relatively to an article retained within the other retaining zone.
- 12 A connector as claimed in claim 8 wherein the split ring is manufactured
10 from any suitable resiliently deformable material.
- 13 A connector as claimed in claim 12 wherein the resiliently deformable material includes a suitable metallic material.
- 15 14 A connector as claimed in claim 13 wherein the metallic material includes conventional spring steel.
- 15 A method for manufacturing a connector, the method including at least the steps of:
20 bending a single wire strand into a substantially circular overlapping unit;
and
bending opposing arcuate ends of the unit out of plane relative each other.
- 16 A connector, according to the invention, substantially as hereinbefore
25 described or exemplified.
- 17 A connector as specifically described with reference to or as illustrated in any one of the accompanying drawings.
- 30 18 A connector including any new and inventive integer or combination of integers, substantially as herein described.

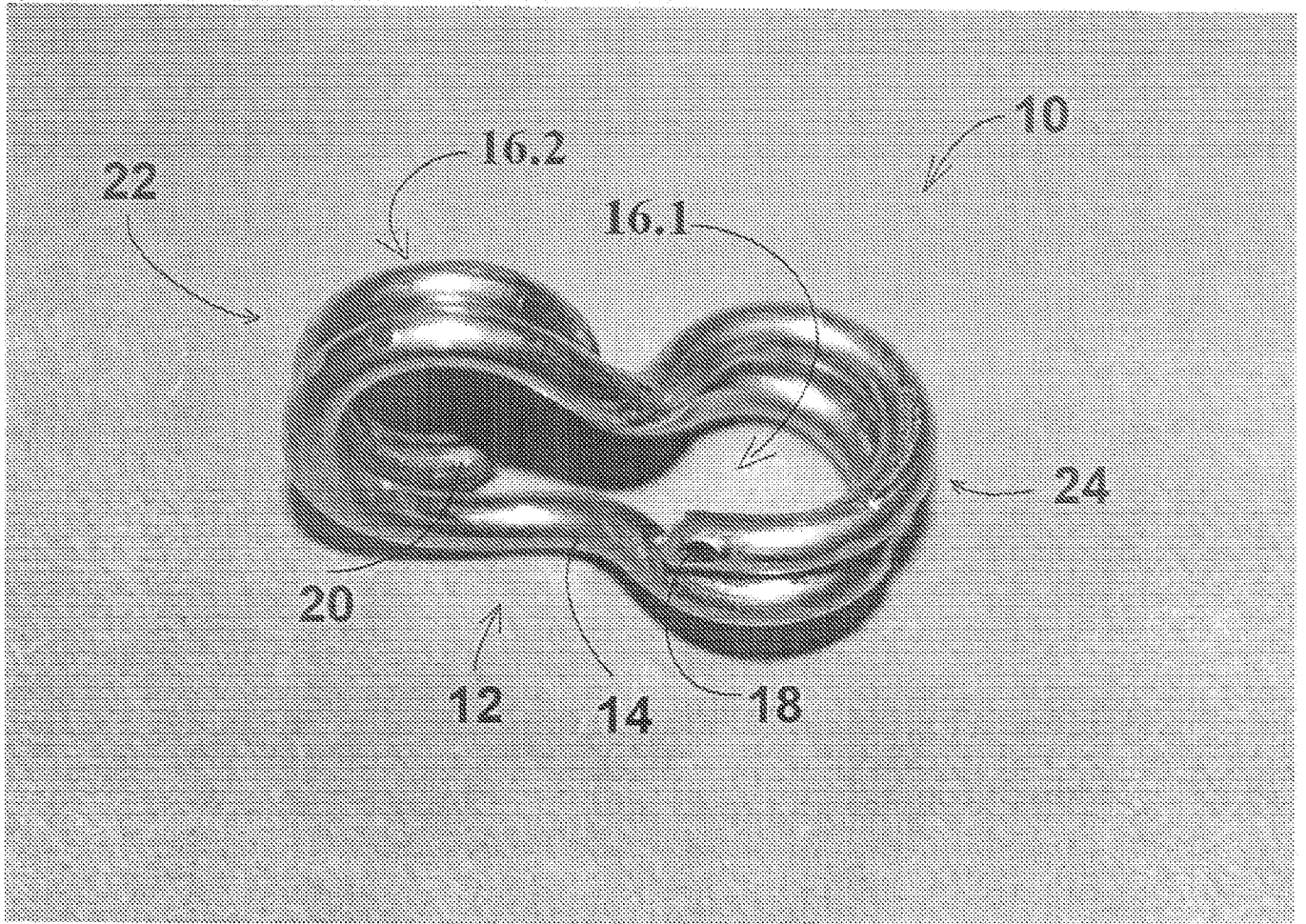


Figure 1

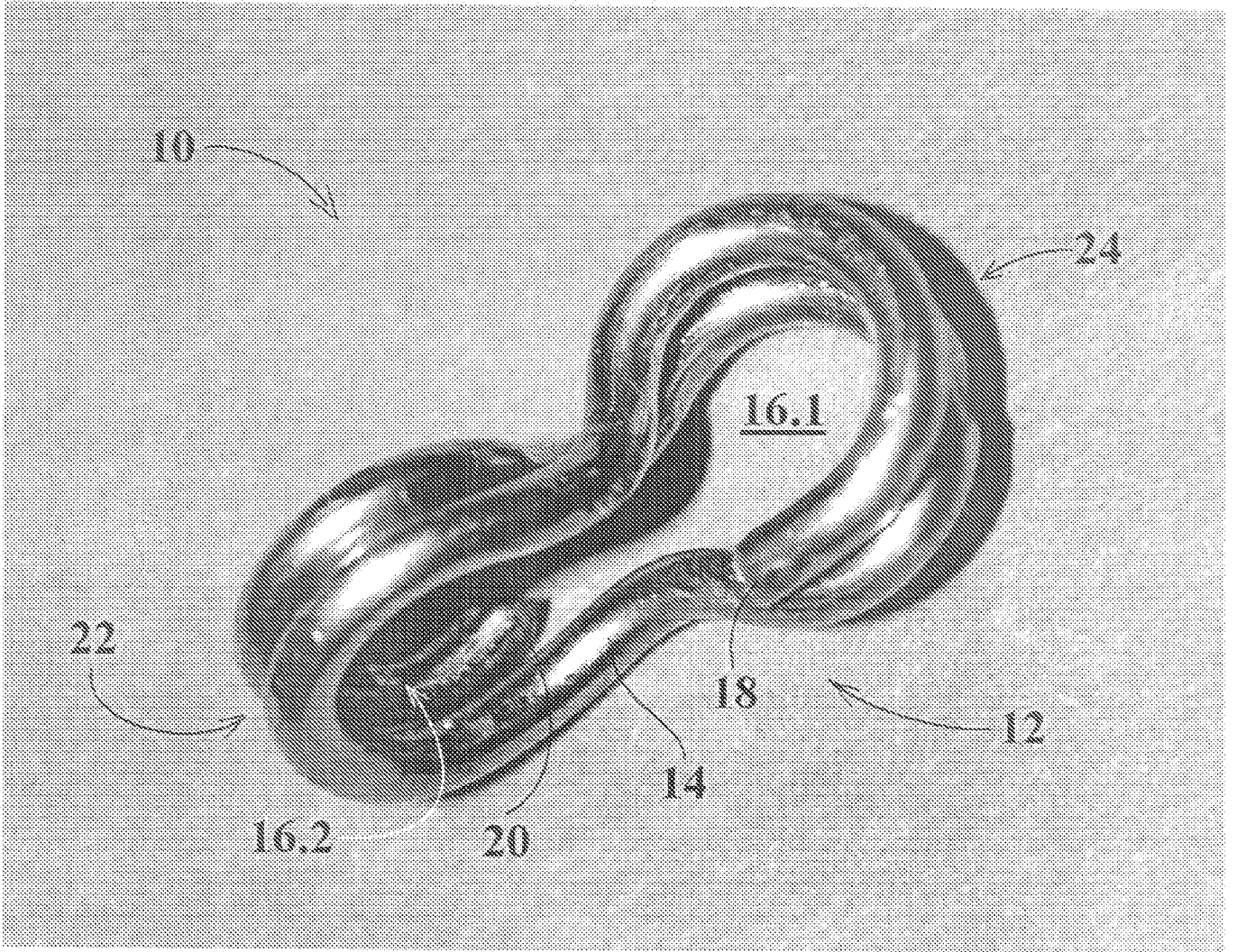


Figure 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT / ZA 2014/000066

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC: A01K 91/03 (2006.01); A44B 15/00 (2006.01); F16B 21/14 (2006.01) According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED</p>		
<p>Minimum documentation searched (classification system followed by classification symbols) A01K, A44B, F16B</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPI, EPODOC, X-FULL</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 825652 A (BARRAUD JEAN, HENRI) 10 March 1938 (10.03.1938) Fig. 5,6,7, page 2, lines 4-21	1-15
X	US 860090 A (ALLEN PAUL HEIDT) 16 July 1907 (16.07.1907) Fig.4, page 1, lines 36-50	1-15
X	US 1892678 A (MCINTYRE GEORGE E, SMYTH LOUIS J) 03 January 1933 (03.01.1933) page 1, lines 1-12, fig. 1,2	1-15
X	US 1236014 A (HERMANN A. SIEVERT) 07 August 1917 (07.08.1917) Complete document, esp. fig. 5,6	1-15
A	KR 19980070110 A (NAKAJIMA TETSURO) 26 October 1998 (26.10.1998) Fig. 3b,4,5, abstract	1-15
<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.</p>		<p><input checked="" type="checkbox"/> See patent family annex.</p>
<p>* Special categories of cited documents:</p>		
<p>“A” document defining the general state of the art which is not considered to be of particular relevance</p>		<p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p>
<p>“E” earlier application or patent but published on or after the international filing date</p>		<p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p>
<p>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p>		<p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p>
<p>“O” document referring to an oral disclosure, use, exhibition or other means</p>		<p>“&” document member of the same patent family</p>
<p>“P” document published prior to the international filing date but later than the priority date claimed</p>		
<p>Date of the actual completion of the international search 28 April 2015 (28.04.2015)</p>		<p>Date of mailing of the international search report 06 May 2015 (06.05.2015)</p>
<p>Name and mailing address of the ISA/AT Austrian Patent Office Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24-535</p>		<p>Authorized officer FESSLER E. Telephone No. +43 / 1 / 534 24-351</p>

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 16 - 18

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

Claims 16,17 and 18 do not contain any technical feature but refer to the description and the drawings only.

3. Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT / ZA 2014/000066

Patent document cited in search report			Patent family member(s)			Publication date
FR	A	825652	FR	A	825652	1938-03-10
US	A	860090	US	A	860090	1907-07-16
US	A	1892678	US	A	1892678	1933-01-03
US	A	1236014	US	A	1236014	1917-08-07