FISHING TACKLE THREADING AND TYING OFF TOOL

A terminal tackle threading and tying off tool formed with a passageway through which fishing line can be pushed. The passageway has an entry and an exit and defines a track which emulates a fishing knot. The passageway is formed with at least one gap into which an eye of an item of tackle can be positioned. In use, threading the line through the entry and out of the exit causes the line to pass through the eye and causes the line to form a knot. In this manner, all that is necessary to thread an item of terminal tackle, such as a hook or swivel, and to form the knot is to position the eye of the item in the gap then push a sufficient length of fishing line into the entry such that the fishing line passes out through the exit. No knowledge of how to tie the knot is required as the passageway operates to automatically form the knot.
FISHING TACKLE THREADING AND TYING OFF TOOL

TECHNICAL FIELD

[01] The present invention is directed to a small tool that can thread a fish hook and other eyelet containing terminal tackle and also knot the fishing line to the tackle.

BACKGROUND

[02] Any references to methods, apparatus or documents of the prior art are not to be taken as constituting any evidence or admission that they formed, or form part of the common general knowledge.

[03] Terminal tackle in fishing refers to the items that are attached to the end of a fishing line. The present invention is directed to terminal tackle of the type that contains an eyelet through which the line can pass. A fish hook is an obvious item. Other items include swivels, sinkers (of the type that contain an eyelet), floats and the like. The invention will be described with reference to a fish hook but it should be appreciated that no particular limitation is meant thereby and the invention may also be used with a swivel or other terminal tackle that could benefit from the invention.

[04] Threading a line through the eye of a fish hook can be quite difficult and can sometimes cause injury as the barb of the hook can be quite close to the hook eye. Thus, various devices are known to assist in threading a fishing line through the hook eye. An example of such as device is described in my earlier application PCT/AU97/00573. This device enabled a line to thread through the hook eye and, once threaded, excess line could be pulled through and the line could be knotted in the normal manner.
However, one disadvantage with this device is that the knot needed to be tied manually. This required a good knowledge of knots and, tying off (knotting) the fishing line manually after threading the hook, can be difficult especially in wet conditions, with wet hands, stiff fingers, poor eyesight, low light conditions (night fishing) and the like.

There are many types of fishing knots used. Some include the blood knot, improved clinch knot, modified hangman’s knot, barrel knot, uni knot and the like. The same type of knot may have several different names. Knowledge of these knots and correct tying of these knots can be problematic especially for a novice. Using the wrong type of knot can result in loss of fishing tackle.

It is known to provide "jigs" or tools that can assist in tying off (knotting) the line. US patent 3402957 provides an example. These tools generally have a body with grooves in the external surface. A person can wind the fish line about the body and in the groove to form a knot. It can be difficult to correctly apply the line about the body in wet and slippery conditions, under low light conditions, with poor eyesight, stiff and cold fingers and the like.

There would be an advantage if it were possible to thread a fish hook and tie off the fishing line in a better manner.

It is an object of the invention to provide a fish hook threading and tying off tool which could overcome at least one of the abovementioned disadvantages or provide the consumer with a useful of commercial choice in the marketplace.

SUMMARY OF THE INVENTION

According to a first aspect of the present invention there is provided a terminal tackle threading and tying off tool formed with a passageway through which fishing line can be pushed, the passageway having an entry and an exit and defining a track which emulates a fishing knot, the passageway further
having at least one gap into which an eye of an item of tackle can be positioned, whereby threading of the line through the entry and out of the exit causes the line to pass through the eye and causes the line to form a knot.

[11] In this manner, all that is necessary to thread an item of terminal tackle such as a hook or swivel and to form the knot is to position the eye of the item in the gap then push a sufficient length of fishing line into the entry such that the fishing line passes out through the exit. No knowledge of how to tie the knot is required as the passageway will form the knot. No fiddling with the line is necessary to form a knot; all that is necessary is to push a sufficient length line through the entry until the end of the line passes through the exit. The item is also automatically threaded during this process. The item can be threaded and tied off in low light conditions, cold and stiff fingers don’t matter, poor eyesight is no longer a problem, and lack of knowledge of fishing knots is overcome.

[12] The shape and configuration of the passageway will define the type of knot that will be formed. The embodiment of the present invention illustrates a track that will form a "blood" knot, but it should be appreciated that this is an embodiment of the invention only and different track configurations can result in the formation of different types of knots.

[13] The passageway is suitably provided with an upper slot to enable the line to be pulled out of the passageway after the line has passed between the entry and exit. The slot may be an open slot or may comprise a resilient or deformable part of the passageway which can be opened upon pulling of the line out of the passageway. As an example, the passageway may comprise resilient lips which are closed but which may be forced open upon pulling on the line.

[14] The tool is suitably provided with a release slot to enable the threaded and tied off item (e.g. hook) and line to be removed from the tool. The release slot may extend between the entry and exit.
[15] Suitably, the passageway is supported in a particular configuration (depending on the type of knots to be formed) by one or more supports. It is preferred that the passageway is protected by some form of outer housing or body. Thus, in an embodiment of the invention, the tool may comprise a body containing an internal said passageway. In this manner, the passageway may be protected against damage, contamination and the like.

[16] The body may comprise a substantially continuous body. Alternatively, the body may comprise a protective outer perforated or mesh type member.

[17] The body is preferably configured to enable it to be attached to another object such as a tackle box or fishing rod, such that both hands are free to pull each end of the line.

[18] The tool may comprise two or more passageway arrangements each with its own entry and exit and each passageway with a different knot design. This can enable a fisherman to decide which knot is the best and insert the item and line into the desired entry/opening.

[19] The shape and size of the body may vary to suit but as it is preferred that the body is relatively compact and readily stored, it is envisaged that the body will have a length of between 3-10 cm and a diameter or cross-section of between 2-5 cm. Of course, it should be appreciated that no unnecessary limitation is to be placed of the invention merely by the exemplification of certain desirable sizes.

[20] The body may be provided with a substantially cylindrical side wall, a substantially planar first end wall and a substantially domed second end wall. The first end wall may contain the, or at least part of the entry. The cylindrical side wall may contain the, or at least part of the exit.

[21] If a body is provided, the body preferably includes an opening into which the eye of a suitable item (e.g. hook) can be inserted, the opening being
in communication with the gap in the passageway such that insertion of the item into the passageway causes the eye to be positioned in the gap.

BRIEF DESCRIPTION OF THE DRAWINGS

[22] Preferred features, embodiments and variations of the invention may be discerned from the following Detailed Description which provides sufficient information for those skilled in the art to perform the invention. The Detailed Description is not to be regarded as limiting the scope of the preceding Summary of the Invention in any way. The Detailed Description will make reference to a number of drawings as follows:

[23] Figure 1. Illustrates a tackle threading and tying off tool.
[24] Figure 2. Illustrates the tool in use.
[25] Figure 3 Illustrates, schematically, the passageway inside the tool.
[26] Figure 4. Illustrates a large scale "mock up" of the internal passageway with a fish hook in position.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[27] Referring to the figures, there is illustrated a terminal tackle threading and tying off tool 10 which has an internal curved passageway 11 (see figure 3 and 4) through which fishing line 12 (see figure 4) can be pushed, the passageway having an entry 13 (see figure 1 at least) and an exit 14 (see figure 1 at least) and defining a track which emulates a fishing knot, the passageway further having at least one gap 15 (see figure 3 and 4) into which the eye of an item of terminal tackle can be positioned such that threading of the line through the entry 13 and out of the exit 14 causes the line to pass through the eye and causes the line to form a knot.

[28] In use, all that needs to be done is for a desired item (e.g. fish hook) to be inserted through exit 14 (this will be described in greater detail below) and then a fishing line 12 is pushed into entry 13 until such time as the fishing line emerges from exit 14 (see figure 2). At this stage, the fish hook has been
threaded and a loose knot has been formed. All that is now necessary is for
the person to pull each part of the fishing line 12 to tighten the knot and then
to remove the fish hook and line from the tool via a release slot 16 which will
be described in greater detail below.

[29] Thus, it is no longer necessary to have a good knowledge of knots.
Also, the fish hook can be threaded and attached to a fishing line in a simple
and easy manner.

[30] The tool has no moving parts and does not contain any complicated
internal mechanism such as springs and the like. Additionally, the
passageway that defines the knot is internal and all the person has to do is to
keep pushing the fishing line through entry 13 until it emerges through exit 14.

[31] The tool 10 comprises a small item (see for instance figure 2) which
can be easily used and easily stored.

[32] Tool 10 can be made in two halves (not illustrated) that can be
attached together. Each half can contain part of the passageway 11. It is
considered easier to manufacture tool 10 with a relatively complex
passageway 11 by forming the tool into two separate parts that can be
attached together.

[33] Passageway 11 is illustrated schematically in figure 3. This particular
passageway defines a track that forms a "blood" knot. However, it should be
appreciated that the passageway can define different tracks to form different
types of knots.

[34] Passageway 11 is formed with an upper slot 17 which is just large
enough to enable the fishing line 12 in the passageway to be pulled out of the
passageway once the hook has been threaded and the knot has been formed.
During the threading process, the fishing line is generally pushed against the
lower internal wall of passageway 11 and therefore away from slot 17.
The tool 10 has an entry 13. Entry 13 has a flared opening 19 to make it easier to insert the end of the fishing line into the entry and therefore into the passageway 11.

In the particular embodiment, tool 10 has a generally cylindrical housing or body 20 with a lower substantially planar end wall 21 and a domed second end wall 22. End wall 21 contains the entry 13. The generally cylindrical body 20 contains the exit 14.

The passageway 11 is provided with at least one gap 15. This interruption of passageway 11 enables the eye of a hook 23 to be inserted into the gap (see figure 4) such that when fishing line is pushed along the passageway, the fishing line will pass through the eye of the hook 23 and therefore thread the hook.

Further pushing of the fishing line through entry 13 will cause the fishing line to continue along the track of passageway 11 to form the blood knot.

Passageway 11 has an exit 14. Continued pushing of the fishing line along the passageway will cause the fishing line to pass through exit 14 (see figure 2).

Exit 14 also comprises the opening into which the eye of a fish hook can be inserted (see figure 2), the opening being in communication with the gap 15 in the passageway such that insertion of the fish hook into the opening causes the eye of official to be positioned in the gap. Thus, exit 14 has a dual purpose.

Figure 4 illustrates a large "mock up" of the internal passageway in tool 10 and illustrates the entry 13 when fishing line is pushed into the
passageway 11, the gap 15 which contains the eye of a hook 23, and the exit 14. In practice, this passageway is within the confines of tool 10.

[42] Referring to figure 2, once the fishing line has passed through exit 14 and out of the tool 10, a person can hold this part of the fishing line (that has passed through exit 14) and can hold the other part of the fishing line (in front of entry 13) and can pull the two parts apart to tighten the formed knot. During this process, the line will also be pulled out of passageway 11 (via the slot 17 in the passageway). Then, the fish hook 23 (connected to the fishing line) can be pulled out of exit 14 and the line can be pulled out the tool via release slot 16.

[43] In a variation, it is envisaged that the tool can comprise a removable passageway arrangement. In this variation, the outer body of the tool may comprise a cover or shell that can be opened. A desired passageway arrangement (which determines the type of knot) can then be inserted into the shell and the shell can be closed to provide the tool.

**USE FOR THE INVENTION**

[44] The tool provides a simple, virtually fool proof, way to enable a hook to be threaded and correctly knotted.

[45] In compliance with the statute, the invention has been described in language more or less specific to structural or methodical features. The term "comprises" and its variations, such as "comprising" and "comprised of" is used throughout in an inclusive sense and not to the exclusion of any additional features. It is to be understood that the invention is not limited to specific features shown or described since the means herein described comprises preferred forms of putting the invention into effect. The invention is, therefore, claimed in any of its forms or modifications within the proper scope of the appended claims appropriately interpreted by those skilled in the art.
Throughout the specification and claims (if present), unless the context requires otherwise, the term "substantially" or "about" will be understood to not be limited to the value for the range qualified by the terms.

Any embodiment of the invention is meant to be illustrative only and is not meant to be limiting to the invention. Therefore, it should be appreciated that various other changes and modifications can be made to any embodiment described without departing from the spirit and scope of the invention.
CLAIMS:

1. A terminal tackle threading and tying off tool formed with a passageway through which fishing line can be pushed,
   - the passageway having an entry and an exit and defining a track which emulates a fishing knot,
   - the passageway further having at least one gap into which an eye of an item of tackle can be positioned
     whereby threading of the line through the entry and out of the exit causes the line to pass through the eye and causes the line to form a knot.

2. A tool according to claim 1 wherein the track is shaped to emulate a fishing knot comprising a "blood" knot.

3. A tool according to claim 1 or claim 2, wherein the passageway is formed with an upper slot to enable the line to be pulled out of the passageway after the line has passed between the entry and exit.

4. A tool according to any one of the preceding claims formed with a release slot to enable the threaded and tied off tackle and line to be removed from the tool.

5. A tool according to any one of the preceding claims wherein the passageway is supported in a particular configuration corresponding to a predetermined knot by one or more supports.

6. A tool according to any one of the preceding claims including an outer housing protecting the passageway.

7. A tool according to claim 6, wherein the housing is formed with a cylindrical side wall, a planar first end wall and a domed second end wall.
8. A tool according to claim 7, wherein the first end wall contains at least part of the entry.

9. A tool according to claim 7 or claim 8, wherein the cylindrical side wall contains at least part of the exit.

10. A tool according to any one of claims 6 to 9, wherein the housing includes an opening into which the eye of the tackle can be inserted, the opening being in communication with the gap in the passageway such that insertion of the item into the passageway causes the eye to be positioned in the gap.

11. A tool according to any one of the preceding claims having a length of between 3-10 cm and a diameter or cross-section of between 2-5 cm.
INTERNATIONAL SEARCH REPORT

International application No. PCT/AU2015/000204

A. CLASSIFICATION OF SUBJECT MATTER

A01K 91/04 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC.

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPIAP; IPC/CPC Marks A01K91/04, D03J3, B65H69/04 and Keywords: thread, tying, gap, track, knot, tackle and similar terms.

TXPEA, TXPEB, TXPEC, TXPEE, TXPEF, TXPEH, TXPEI, TXPEP, TXPES, TXPEPEA, TXPUSEOA, TXPUSEIA, TXPUSEA, TXPUSEB, TXPWOEA and Keywords: knot, track, tackle, fish line and similar terms.

Google Patents/ESpacenet/Google and Keywords: fish line knot track and similar terms; applicant/inventor names searched.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category* Citation of document, with indication, where appropriate, of the relevant passages

Documents are listed in the continuation of Box C Relevant to claim No.

| X | Further documents are listed in the continuation of Box C | X | See patent family annex |

* Special categories of cited documents:
  "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
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  "O" document referring to an oral disclosure, use, exhibition or other means
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  "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
  "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
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This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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