A fishing-tackle connector for connecting an elastic cord to a fishing line comprises a connector body 3 to which an elastic cord and a fishing line may be attached, and a sleeve 5 adapted to enclose at least part of the connector body, at least part of the exterior of the sleeve being substantially ball-shaped 19, or the sleeve being formed from a resilient material, such as an elastomer. The connector may be used with a fishing pole, to connect the elastic cord of the pole to a fishing line. The second attachment member 11 comprises a slot 13. The elastic cord goes through aperture 9 and is kotted behind first attachment member 7. Fishing line is secured to hook 11 by passing a loop of line over the hook and closing the hook by means of sleeve 5.
Fishing-tackle Connector

The present invention relates to fishing-tackle, and especially relates to fishing poles and the connection of fishing lines thereto.

Fishing poles have been used by anglers for many years, and are now extremely popular. Fishing poles are generally much longer than fishing rods, normally extending to several metres in length (for example, poles of 10 to 16 metres in length are common). Such poles are also substantially rigid, in contrast to fishing rods, which generally are flexible. An important aspect of a fishing pole is the fact that the fishing line is attached to the pole via an elastic cord which generally extends along a hollow internal bore of the pole from an open tip end of the pole and along at least part of the length of the pole towards the angler. One end of the elastic cord is secured in place inside the pole, normally by means of a bung that is prevented from sliding along the bore away from the angler by virtue of the fact that the pole and its internal bore taper towards the remote tip end of the pole. The opposite end of the elastic cord extends out of the tip end of the pole and typically is secured to a connector by which a fishing line (holding rigging such as a hook and a float) is connected to the elastic cord. In use, when a fish is hooked the elastic cord stretches and extends out of the tip end of the pole, allowing the fish to swim against the resilience of the elastic cord until it becomes tired and can be landed by the angler.

In order to connect the elastic cord to the fishing line, a connector is conventionally used. Such connectors comprise a connector body having an aperture through which the elastic cord may be looped and tied, and a hook on which a loop of the fishing line may be placed. A generally cylindrical rigid cap is pushed onto the rear of the connector body to enclose the elastic cord and the aperture where the cord is tied to the connector body. In many known connectors, a separate collar on the connector body is pushed away from the
cap to surround and close the hook, to ensure that the fishing line is retained thereon.

Alternatively, if a connector is not used, the fishing line is instead tied directly to the elastic cord (normally by means of a clinch knot) behind a separate coloured bead that is also tied onto the elastic cord. The bead provides a visual indication to the angler of the end of the cord when a hooked fish has stretched the cord.

The present invention seeks to provide an improved connector for connecting an elastic cord to a fishing line, having advantages to be described below.

Accordingly, a first aspect of the present invention provides a fishing-tackle connector for connecting an elastic cord to a fishing line, the connector comprising:
(a) a connector body to which an elastic cord and a fishing line may be attached; and
(b) a sleeve adapted to enclose at least part of the connector body, at least part of the exterior of the sleeve being substantially ball-shaped.

This aspect of the invention has three main advantages. Firstly, the provision of a substantially ball-shaped part of the sleeve may aid the gripping and manipulation of the sleeve by the angler. Secondly, the ball-shaped part of the sleeve effectively combines a bead with a connector, thus providing a useful visual indicator of the end of the elastic cord. Thirdly, and perhaps most importantly, the ball-shaped part of the sleeve (at least when positioned at the rear end of the sleeve) can aid rotation of the connector with respect to the tip end of the fishing pole. This is important because, as soon as a fish is first hooked, the angler rapidly rotates the pole from a generally horizontal orientation to a generally vertical orientation, and consequently the connector needs to rotate against the tip end of the pole because the line remains approximately horizontal in orientation. (In fact, typically the connector abuts
against a bush provided at the tip end of the pole.) In order to avoid loss of the fish, it is important that the line does not snatch or snag during the rotation of the pole and consequently it is important for the rotation of the connector against the tip end of the pole to be as smooth and rapid as possible. The ball-shaped part of the exterior of the connector sleeve can facilitate this.

In preferred embodiments of the invention, the connector body comprises a first attachment member to which an elastic cord may be attached, and a second attachment member to which a fishing line may be attached. Preferably the second attachment member comprises a hook.

Advantageously, the sleeve may be adapted to enclose at least part of the connector body such that at least part of the first attachment member is thereby enclosed and the hook is thereby closed to retain a loop of fishing line thereon. Consequently, a single such sleeve preferably both encloses the first attachment member and also closes the hook. However, the invention also encompasses the possibility of the sleeve enclosing the first attachment member, and a separate collar of the connector being adapted to close the hook (to retain a fishing line thereon), for example.

The ball-shaped part of the sleeve may be fluted or otherwise profiled. This can further aid the gripping and manipulation of the connector by the angler, and it may also reduce the amount of material used, thus reducing both weight and manufacturing costs.

As mentioned above, the ball-shaped part of the sleeve preferably is an end part of the sleeve. A remainder of the sleeve may, for example, be substantially cylindrical and preferably forms an opposite end of the sleeve extending from the ball-shaped part. Preferably the ball-shaped part of the sleeve is adapted to enclose at least part of the first attachment member, and the cylindrical part preferably is adapted to close the hook (to retain a loop of fishing line on the hook).

In particularly preferred embodiments of the invention, the sleeve is flexible and/or compressive and/or resilient. The sleeve may, for example, have
a Shore A hardness of no greater than 100, preferably no greater than 95, more preferably no greater than 90. (The sleeve preferably also has a Shore A hardness of at least 70, more preferably at least 75, especially at least 80.) The sleeve may be rubbery or slightly tacky to the touch; it may have a roughened surface. Preferably the sleeve is formed from an elastomeric material, for example a thermoplastic elastomer.

An advantage of such a sleeve is that it preferably forms a “sympathetic” contact with the elastic cord attached to the connector body. That is, the sleeve preferably forms a tight conforming contact with the elastic cord substantially without crushing the cord such that it is damaged. Additionally, the above-mentioned properties of the sleeve can aid the retention of the sleeve in place on the connector body, and can also aid the smooth rotation of the sleeve against the tip end of the fishing pole by preventing the connector from sliding on the tip end. The sleeve properties can aid gripping and manipulation by the angler, and they can aid installation on the connector body, for example. In contrast, the connector body preferably is substantially rigid (and preferably is moulded in a single piece from a rigid plastics material).

The sleeve is advantageously formed (e.g. moulded) in a single piece.

Accordingly, a second aspect of the invention provides a fishing-tackle connector for connecting an elastic cord to a fishing line, the connector comprising:
(a) a connector body to which an elastic cord and a fishing line may be attached; and
(b) a sleeve adapted to enclose at least part of the connector body, the sleeve being flexible and/or compressible and/or resilient and/or formed from elastomeric material.

For the avoidance of doubt, it is to be understood that any and all features of the first aspect of the invention may be features of the second aspect of the invention, and vice versa.
A third aspect of the invention provides a fishing pole including a connector according to either of the other aspects of the invention.

A preferred embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, of which:

Figure 1 (views (a) to (d)) shows various views of an embodiment of a fishing-tackle connector according to the invention; and

Figure 2 (views (a) to (c)) shows some further views of the connector shown in Figure 1.

The figures show a preferred embodiment of a fishing-tackle connector 1 according to the invention. The connector 1 comprises a connector body 3 and a sleeve 5. The connector body 3 is moulded in a single piece from a rigid plastics material and comprises a first attachment member 7 formed by virtue of an adjacent aperture 9 extending through the body 3, and a second attachment member 11 in the form of a hook, defined by a slot 13 in the body.

The first attachment member 7 is provided at one end (the rear end) of the connector body, which itself is generally elongate in shape. The first attachment member 7 is suitable for securing an elastic cord (not shown) to the connector, by extending the cord through the aperture 9 and tying a knot in the cord behind the first attachment member. The hook 11 is suitable for securing a fishing line (not shown) to the connector by passing a loop of the line over the hook and closing the hook by means of the sleeve 5, as described below. In such a manner, the elastic cord and the fishing line are attached to each other via the connector.

The sleeve 5 is hollow and has two opposite open ends 15 and 17. A rear end part 19 of the exterior of the sleeve 5 is substantially ball-shaped, and the remainder of the exterior of the sleeve extending to its opposite end is substantially cylindrical. The ball-shaped part 19 is fluted (with flutes 21) to aid gripping and manipulation of the sleeve. The sleeve 5 is moulded in a single
piece from a flexible, compressible and resilient elastomer material, preferably a thermoplastic elastomer.

In use, the sleeve 5 is threaded onto an end of the elastic cord to be connected, in such a way that the open end 15 at the ball-shaped rear end of the sleeve is threaded onto the cord first. Next, the cord is threaded through the aperture 9 extending through the connector body 3 and tied-off so that the cord is tied to the connector body via the first attachment member 7. Then a tied loop provided in the end of the fishing line to be connected is passed over the hook 11 so that the loop is retained in the slot 13. The sleeve 5 is then pushed forward onto the connector body 3 until the first attachment member 7 is enclosed by the sleeve, and the hook 11 is closed by the sleeve, as illustrated in Figure 1 (a) and Figure 1 (d). In this way, the knot in the elastic cord, and the cord’s attachment to the connector body 3 are enclosed, and the loop of fishing line is retained in a secure manner on the hook 11 of the connector body, by the sleeve 5.

When fully connected and installed, the elastic cord extends out of the sleeve 5 of the connector 1 via the open end 15 of the sleeve. The ball-shaped part 19 of the sleeve abuts against a bush provided at the tip end of a fishing pole (not shown), and the elastic cord extends along an interior bore of the fishing pole to a bung inserted into the pole. When a fish is hooked on a line attached to the connector, and the pole is quickly lifted to a near vertical orientation, the ball-shaped part 19 of the sleeve 5 can rotate against the bush before the fish stretches the elastic cord such that the connector 1 becomes spaced from the tip end of the rod.
Claims

1. A fishing-tackle connector for connecting an elastic cord to a fishing line, the connector comprising:
   (a) a connector body to which an elastic cord and a fishing line may be attached; and
   (b) a sleeve adapted to enclose at least part of the connector body, at least part of the exterior of the sleeve being substantially ball-shaped.

2. A connector according to claim 1, in which the connector body comprises a first attachment member to which an elastic cord may be attached, and a second attachment member to which a fishing line may be attached.

3. A connector according to claim 2, in which the second attachment member comprises a hook.

4. A connector according to any preceding claim, in which the ball-shaped part of the sleeve is fluted or otherwise profiled.

5. A connector according to any preceding claim, in which the ball-shaped part of the sleeve comprises an end part of the sleeve.

6. A connector according to claim 2 or claim 3, in which the ball-shaped part of the sleeve is adapted to enclose at least part of the first attachment member.

7. A connector according to claim 2 or claim 3, in which a part of the sleeve is adapted to close the second attachment member to retain a loop of fishing line thereon.

8. A connector according to claim 7, in which the part of the sleeve adapted to close the second attachment member is substantially cylindrical.
9. A connector according to claim 8 when dependent upon claim 5, in which the cylindrical part of the sleeve is an opposite end part of the sleeve extending from the ball-shaped end part of the sleeve.

10. A connector according to any preceding claim, in which the sleeve is flexible.

11. A connector according to any preceding claim, in which the sleeve is compressible.

12. A connector according to any preceding claim, in which the sleeve is resilient.

13. A connector according to any preceding claim, in which the sleeve is formed from elastomeric material.

14. A fishing-tackle connector for connecting an elastic cord to a fishing line, the connector comprising:
   (a) a connector body to which an elastic cord and a fishing line may be attached; and
   (b) a sleeve adapted to enclose at least part of the connector body, the sleeve being flexible and/or compressible and/or resilient and/or formed from elastomeric material.

15. A connector according to claim 13 or claim 14, in which the elastomeric material comprises a thermoplastic elastomer.

16. A connector according to any preceding claim, in which the sleeve is moulded in a single piece.

17. A connector according to any preceding claim, in which the connector body is substantially rigid.
18. A fishing-tackle connector substantially as described herein with reference to the accompanying figures.

19. A fishing-tackle connector substantially as illustrated in the accompanying figures.

20. A fishing pole including a connector according to any preceding claim.
Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

<table>
<thead>
<tr>
<th>Category</th>
<th>Relevant to claims</th>
<th>Identity of document and passage or figure of particular reference</th>
</tr>
</thead>
</table>
| X,A      | 1 to 12,16,17,20,  | GB 2330756 A
           | 20 (STACK) Whole document, especially figure 5 & page 16 paragraph 4 |
| A        | 1 at least         | GB 2110511 A
           | (I & C CARBONITE) Whole document |

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Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC:

- A1A; E2A

Worldwide search of patent documents classified in the following areas of the IPC:

- A01K; F16B; F16G

The following online and other databases have been used in the preparation of this search report:

- EPODOC, WPI, PAJ