



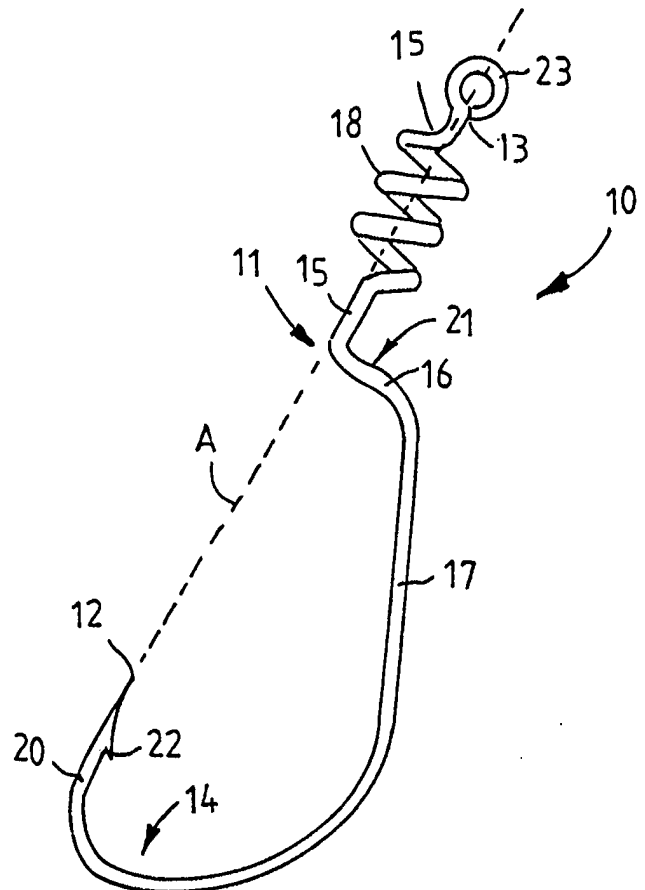
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

| | | |
|---|------------------|---|
| <p>(51) International Patent Classification ⁶ : A01K 85/02, 83/06</p> | <p>A1</p> | <p>(11) International Publication Number: WO 98/52409 (43) International Publication Date: 26 November 1998 (26.11.98)</p> |
| <p>(21) International Application Number: PCT/US98/10429 (22) International Filing Date: 21 May 1998 (21.05.98) (30) Priority Data: 97/4453 22 May 1997 (22.05.97) ZA (71)(72) Applicants and Inventors (for all designated States except US): ASHER, Delmar, Lawrence [US/US]; Route 3, Boerne, TX 78006 (US). POLYDOROU, Basil [ZA/ZA]; 15 Kennit Street, Knysna 6570 (ZA). (72) Inventor; and (75) Inventor/Applicant (for US only): FOSTER, Vivian, Edward [ZA/ZA]; 7 Andrew Street, Rexfords 6570 (ZA). (74) Agents: SALIWANCHIK, David, R. et al.; Saliwanchik, Lloyd & Saliwanchik, Suite A-1, 2421 N.W. 41st Street, Gainesville, FL 32606-6669 (US).</p> | | <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report.</p> |

(54) Title: FISH-HOOK DEVICE

(57) Abstract

According to the present invention there is provided a fish-hook device (10, 30, 40) comprising an elongate body (11) defining opposite first (12) and second (13) ends. A hook formation (14) is provided in the body (11) at or towards the first end (12) and a shank (15, 16, 17) is provided in the body (11) to extend between the hook formation (14) and the second end (13). A coil formation (18) is provided in the shank (15) towards the second end (13) of the body. The device is characterized therein that the first end (12) and coil formation (18) are positioned relative to each other allowing an elongate bait member (19) in use threaded over the coil formation (18) to extend generally straight when the second end (13) is also inserted in the bait (18).



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

| | | | | | | | |
|-----------|--------------------------|-----------|--|-----------|--|-----------|--------------------------|
| AL | Albania | ES | Spain | LS | Lesotho | SI | Slovenia |
| AM | Armenia | FI | Finland | LT | Lithuania | SK | Slovakia |
| AT | Austria | FR | France | LU | Luxembourg | SN | Senegal |
| AU | Australia | GA | Gabon | LV | Latvia | SZ | Swaziland |
| AZ | Azerbaijan | GB | United Kingdom | MC | Monaco | TD | Chad |
| BA | Bosnia and Herzegovina | GE | Georgia | MD | Republic of Moldova | TG | Togo |
| BB | Barbados | GH | Ghana | MG | Madagascar | TJ | Tajikistan |
| BE | Belgium | GN | Guinea | MK | The former Yugoslav Republic of Macedonia | TM | Turkmenistan |
| BF | Burkina Faso | GR | Greece | ML | Mali | TR | Turkey |
| BG | Bulgaria | HU | Hungary | MN | Mongolia | TT | Trinidad and Tobago |
| BJ | Benin | IE | Ireland | MR | Mauritania | UA | Ukraine |
| BR | Brazil | IL | Israel | MW | Malawi | UG | Uganda |
| BY | Belarus | IS | Iceland | MX | Mexico | US | United States of America |
| CA | Canada | IT | Italy | NE | Niger | UZ | Uzbekistan |
| CF | Central African Republic | JP | Japan | NL | Netherlands | VN | Viet Nam |
| CG | Congo | KE | Kenya | NO | Norway | YU | Yugoslavia |
| CH | Switzerland | KG | Kyrgyzstan | NZ | New Zealand | ZW | Zimbabwe |
| CI | Côte d'Ivoire | KP | Democratic People's Republic of Korea | PL | Poland | | |
| CM | Cameroon | KR | Republic of Korea | PT | Portugal | | |
| CN | China | KZ | Kazakstan | RO | Romania | | |
| CU | Cuba | LC | Saint Lucia | RU | Russian Federation | | |
| CZ | Czech Republic | LI | Liechtenstein | SD | Sudan | | |
| DE | Germany | LK | Sri Lanka | SE | Sweden | | |
| DK | Denmark | LR | Liberia | SG | Singapore | | |
| EE | Estonia | | | | | | |

FISH-HOOK DEVICETechnical Field and Background of the Invention

This invention relates to fish-hook devices.

It is well known that anglers such as bass-anglers often use a synthetic worm secured to a fish-hook device as bait to catch fish. A normal fish-hook device comprises a hook formation towards one end of the device and a substantially straight or slightly curved shank towards the other end of the device. In most cases the worm is only threaded over the shank and the hook formation is not inserted in the worm. This allows the worm to extend generally straight with a portion thereof trailing from the shank of the fish-hook device. It is important that the worm is generally straight when secured to the fish-hook device otherwise it will appear unnatural and will not be taken by the fish. It often happens that a fish takes the worm below the fish-hook device and then partly or completely pulls the worm from the fish-hook device. When the worm is completely pulled off it is lost and a new worm has to be used. Alternatively, the worm is partly pulled off the hook by sliding down the shank to come to rest on the hook formation. In this position the shape of the worm is often unnatural (in that it is not generally straight anymore) and fish will not take it again.

In order to improve securement of a synthetic worm to a hook device, hook

devices have in the past been modified to provide a step formation in the shank of the hook-device. Accordingly the shank defines a first generally straight portion in use extending generally downwardly from the end of the hook device distal to the hook formation; a second portion extending generally transverse from the lower end defined by the first portion; and a third portion extending transversely from the end defined by the second portion which is distal from the first portion. The third portion in use extends generally downwardly from the second portion and the shank thus defines a step formation therein. In use this step formation improves securement of a synthetic worm to the shank since it reduces sliding of the worm down the shank.

SU 129 2686 discloses a fish-hook device wherein the shank is coiled. It is stated that this fish-hook device has improved shock absorbing properties and live bait positioning. One major disadvantage of this fish-hook device and also the normal fish-hook device is that if a synthetic worm is threaded onto the shank, the tip of the hook formation cannot be inserted into the worm unless the worm is bent to such an extent that it will not be generally straight anymore. If the worm is bent in this way it would cause the worm to appear unnatural and fish will not go for it. The hook devices shown in the drawings of SU 129 2686 have coiled sections in their shanks extending from a height more or less in line with the tip of the hook formation

upwardly towards the other end defined by the fish-hook device. Accordingly if a synthetic worm is threaded over the coiled section the worm will have to suspend from the coiled shank without inserting the tip of the hook formation in the worm otherwise the worm, will not be generally straight anymore. One disadvantage is that the exposed tip of the hook formation easily catches onto objects at the bottom of a lake or to objects such as plants in the lake when the hook is pulled through the water. This hook is accordingly not "weedless".

Summary of the Invention

It is accordingly an object of the present invention to provide an alternative fish-hook device which overcomes or at least minimizes some of the above disadvantages.

According to the present invention there is provided a fish-hook device comprising an elongate body defining opposite first and second ends; a hook formation in the body at or towards the first end; a shank in the body extending between the hook formation and the second end; and a coil formation in the shank towards the second end of the body; and the device being characterized therein that the first end and coil formation are positioned relative to each other allowing an elongate bait member in use

threaded over the coil formation to extend generally straight when the second end is also inserted in the said bait.

In a preferred embodiment of the invention the coil formation comprises a helical formation defining two opposite ends and preferably it includes one or more loops. Preferably the helical formation is elongate defining two opposite ends; and preferably the helical formation includes a plurality of loops.

In one embodiment of the invention the distance between the coil formation and the first end of the fish-hook device is sufficient to allow an elongate bait member in use threaded over the coil formation to extend generally straight when the second end is also inserted in the said bait member. Preferably the coil formation and the first end of the fish-hook device are generally aligned. In the embodiment of the invention wherein the coil formation comprises a helical formation; the one end of the helical formation which is closest to the first end of the fish-hook device preferably points generally towards the first end of the fish-hook device.

In a preferred embodiment of the invention the first end of the hook device is substantially in line with a central line extending longitudinally through one or more loops defined by the helical formation or a line parallel to said

central line but touching or falling inside the one or more loops of the helical formation.

Preferably the shank includes a step formation therein. The step-shaped shank may comprise a first portion extending from the second end of the fish-hook device; a second portion extending generally transverse from the first portion; and a third portion extending generally transverse from the second portion towards the hook formation to provide the step formation.

Preferably the first portion and third portion of the shank extend parallel to each other or diverge away from each other as they extend in a direction away from the second end of the fish-hook device.

Preferably, the coil formation is substantially rigid.

The first end of the fish-hook device may be sharpened.

Preferably at least one barb is provided on the body towards the first end thereof.

Preferably the hook-device includes an eye formation at the second end thereof.

According to another aspect of the present invention there is provided a fish-hook device comprising an elongate body defining opposite first and second ends; a hook formation in the body at or towards the first end; a shank in the body extending between the hook formation and the second end; a coil formation in the shank towards the second end of the body; a step formation in the shank between the coil formation and the hook formation thereby bringing the first end of the body more in line with part of the shank wherein the coil formation is located.

Brief Description of the Drawings

Without thereby limiting the scope of the invention and by means of example only, three embodiments thereof will now be further described with reference to the accompanying drawings wherein:

Figure 1 is a side view of a fish-hook device according to a first embodiment of the present invention;

Figure 2 is a side view of a second embodiment of a fish-hook device according to the present invention;

Figure 3 is a side view of a third embodiment of a fish-hook device

according to the present invention; and

Figure 4 is a side view of the fish-hook device of Figure 1 with a synthetic worm secured thereto.

In the accompanying drawings the same reference numerals are used to denote corresponding parts.

Detailed Description of Specific Embodiments

Referring now to Figure 1 a fish-hook device 10 comprises an elongate body 11 defining opposite first and second ends 12 and 13 respectively. A hook formation 14 is provided in the body 11 towards the first end 12. A shank 15, 16 and 17 extends between the hook formation 14 and the second end 13. A coil formation 18 is provided in the shank portion 15 towards the second end 13. The first end 12 and coil formation 18 are positioned relative to each other allowing an elongate bait member such as a synthetic worm 19 [as shown in Figure 4] in use threaded over the spiral formation 18 to extend generally straight when the second end 12 is inserted in the worm 19.

The coil formation 18 comprises an elongate helical formation defining two opposite ends; and the formation including a plurality of loops which are of the same size. The loops are circular but it will be appreciated that in other embodiments they may have other shapes such as oval. The loops of the helical formation 18 have gaps between them to allow bait to be threaded onto the helical formation 18. The helical formation 18 is substantially rigid with the distance between the loops remaining substantially unchanged.

It will be appreciated that the helical formation 18 serves to improve securement of bait on the hook-device 10.

The helical formation 18 and the first end 12 are generally aligned which allows a synthetic worm 19 or the like to extend generally straight when threaded over the helical formation 18 and the end 12 is inserted in the worm 19 [as shown in Figure 4]. In this embodiment of the invention the first end 12 is in line with the central line A extending longitudinally through the helical formation. The end of the helical formation 18 distal from the second end 13 points towards the first end 12. In this embodiment of the invention the portion 20 adjacent to the end 12 is formed to be substantially straight and to be in line with the line A.

The shank 11 includes a step formation 21 therein. The step-shaped shank

comprises a first portion 15 extending from the second end 13 of the fish-hook device 10. A second portion 16 extends generally transverse from the first portion and a third portion 17 extends generally transverse from the second portion towards the hook formation 14 thus providing the step formation 21.

The step formation 21 serves to improve securement of the bait to the hook-device 10 but it also serves to bring the first end 12 in line with line A.

The helical formation 18 is located in the first portion 15 of the shank and the coils of the helical formation 18 extend generally transverse to the sections of the portion 15 projecting from opposite ends of the helical formation 18.

In an alternative embodiment of the invention the portions 16 and 17 may form a single portion without an angle being formed between them. This combined portion (which may be curved) may then extend at an angle from the portion 15 to form a step formation.

In this embodiment of the invention the sections of the portion 15 projecting from opposite ends of the helical formation 18, the portion 16 and the portion 17 are substantially straight.

The first end 12 is sharpened and a barb 22 is provided towards the sharpened end 12.

The hook device 10 also includes an eye formation at the second end 13.

When a worm 19 is secured to the hook device 10 as shown in Figure 4 the helical formation 18 reduces slipping of the bait down the shank 15, 16 and 17. Since the first end 12 is inserted in the worm it will not catch onto objects as the hook device 10 is dragged through the water and the hook is accordingly "weedless". The positioning of the end 12 relative to the helical formation 18 also ensures that the worm 19 extends generally straight when the worm is secured as shown in Figure 19.

Another advantage of the hook device 10 is that as a result of its design the weight of the device 10 is such that even if the end 12 in use projects through the bait 19 the end 12 will point away from the bottom of the lake or dam and will not easily catch onto objects. Such an exposed end 12 will also trail behind the bait 19 and the shank portion 17 as the hook device 10 is dragged through the water. This will reduce the chances of the exposed end 12 catching onto objects in the water.

Referring now to Figure 2 the fish-hook device 30 is very similar to the hook

device 10. The shape of the step formations 21 and the hook formations 14 of the two devices are slightly different. The end 12 of the hook device 30 is not directly in line with the central line A but is substantially in line therewith. Alternatively it can also be said that the end 12 is in line with the line B which extends parallel to the line A and falls inside the helical formation 18.

Referring now to Figure 3 the fish-hook device 40 is very similar to the hook-device 10. The shape of the step formations 21 and the hook formations 14 of the two devices are slightly different. The end 12 of the hook device 40 is not in line with the line A, but is in line with line B which extends parallel to line A and touches the helical formation 18.

It will be appreciated that many variations in detail are possible without thereby departing from the scope and spirit of the invention.

CLAIMS

1. A fish-hook device comprising an elongate body defining opposite first and second ends; a hook formation in the body at or towards the first end; a shank in the body extending between the hook formation and the second end; and a coil formation in the shank towards the second end of the body; and the device being characterized therein that the first end and coil formation are positioned relative to each other allowing an elongate bait member in use threaded over the spiral formation to extend generally straight when the second end is also inserted in the said bait.
2. The fish-hook device of claim 1 wherein the spiral formation comprises a helical formation.
3. The fish-hook device of claim 2 wherein the helical formation is elongate and includes a plurality of loops.
4. The fish-hook device of any one of the preceding claims wherein the distance between the coil formation and the first end of the fish-hook device is sufficient to allow an elongate bait member in use threaded

over the spiral formation to extend generally straight when the second end is also inserted in the said bait member.

5. The fish-hook device of either one of claims 2 or 3 wherein the helical formation and the first end of the fish-hook device are generally aligned with the helical formation pointing generally towards the said first end.
6. The fish-hook device of claim 5 wherein the first end of the hook device is substantially in line with a central line extending longitudinally through the helical formation or a line parallel to said central line but touching or falling inside the helical formation.
7. The fish-hook device of any one of the preceding claims wherein the shank includes a step formation therein.
8. The fish-hook device of claim 1 wherein the step-shaped shank comprises a first portion extending from the second end of the fish-hook device; a second portion extending generally transverse from the first portion; and a third portion extending generally transverse from the second portion towards the hook formation to provide the step formation.

9. The fish-hook device of any one of the preceding claims wherein the coil formation is substantially rigid.
10. The fish-hook device of any one of the preceding claims wherein the first end of the fish-hook device is sharpened.
11. The fish-hook device of any one of the preceding claims wherein at least one barb is provided on the body towards the first end thereof.
12. The fish-hook device of any one of the preceding claims which includes an eye formation at the second end thereof.
13. A fish-hook device comprising an elongate body defining opposite first and second ends; a hook formation in the body at or towards the first end; a shank in the body extending between the hook formation and the second end; a coil formation in the shank towards the second end of the body; a step formation in the shank between the coil formation and the hook formation thereby bringing the first end of the body more in line with part of the shank wherein the coil formation is located.
14. A fish-hook device substantially as herein described with reference to any one of the attached drawings.

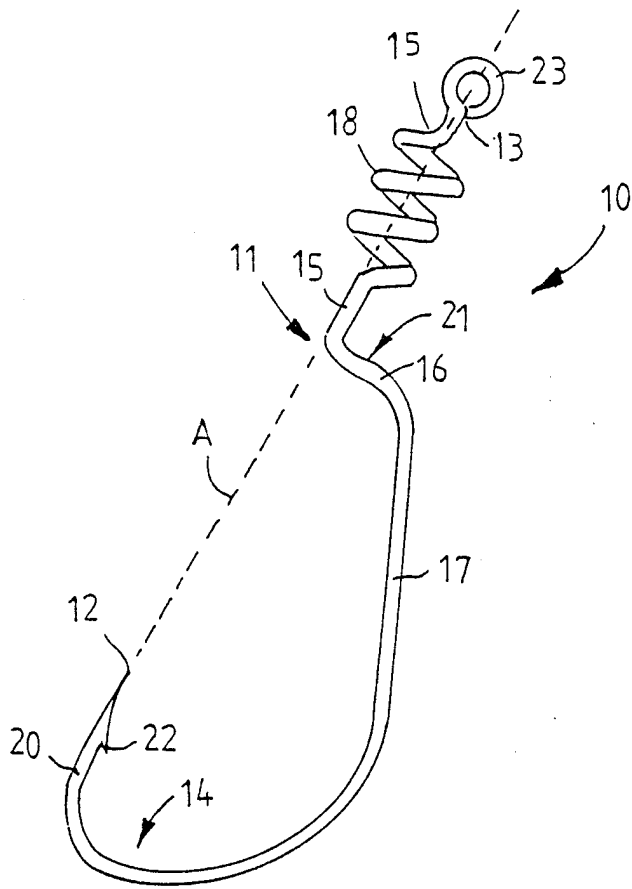


FIGURE 1

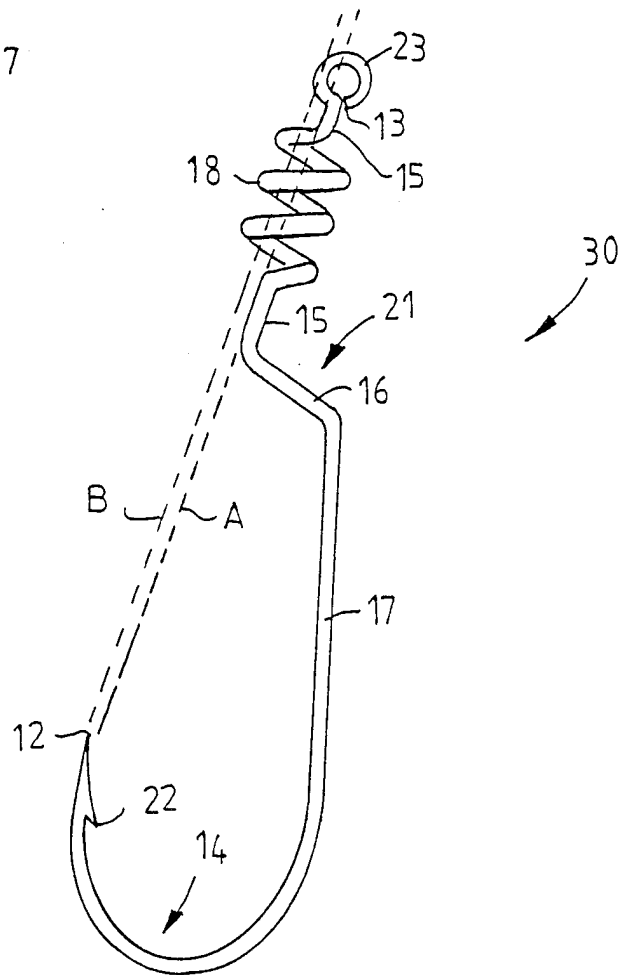


FIGURE 2

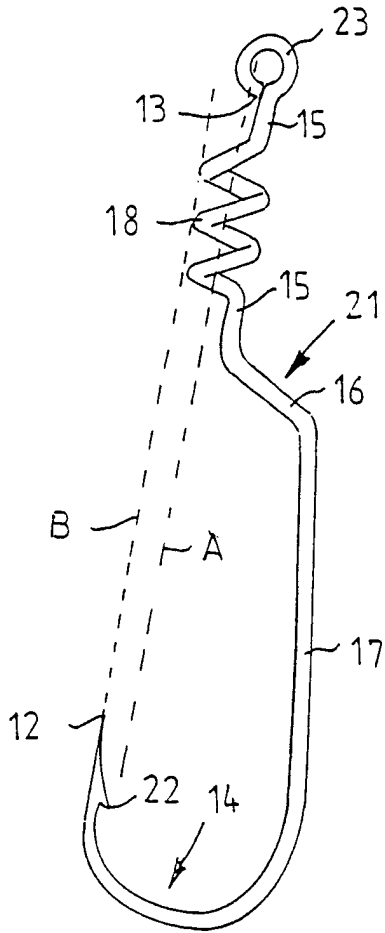


FIGURE 3

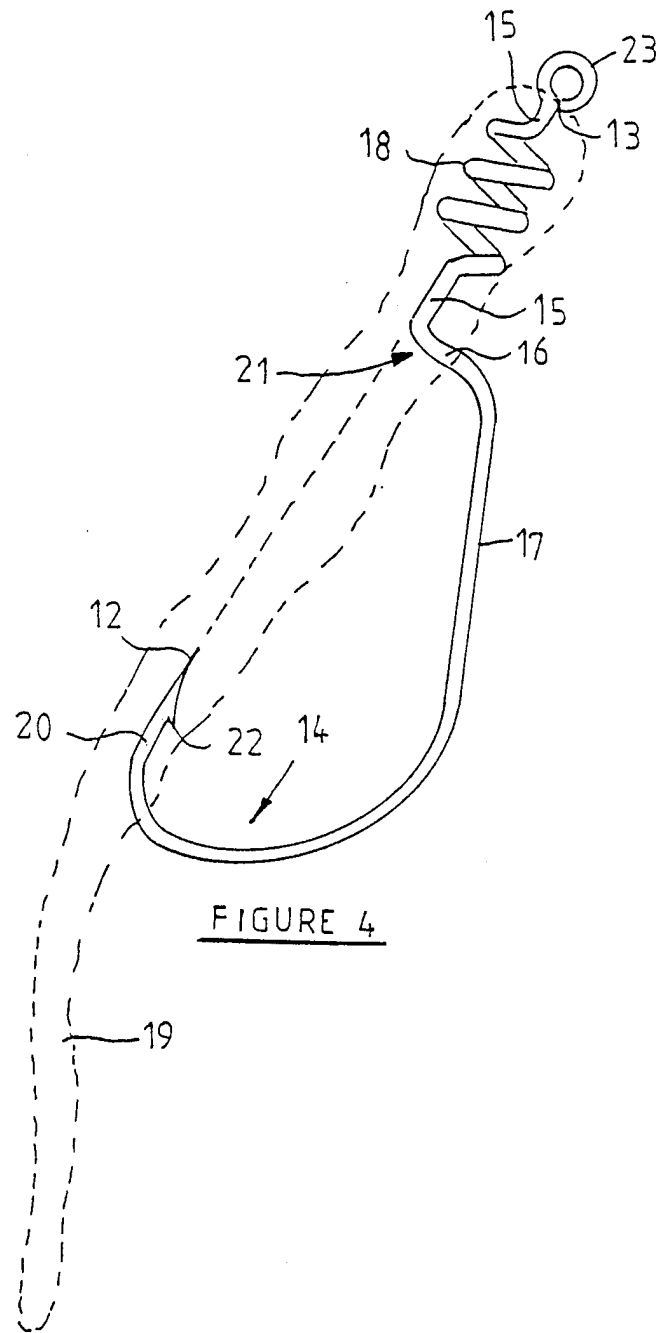


FIGURE 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/10429

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :AOIK 85/02, 83/06
US CL :43/42.1, 42.24, 42.28, 43.16, 43.2, 44.2
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)
U.S. : 43/42.1, 42.24, 42.28, 43.16, 43.2, 44.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | US 4,862,628 A (MCGAHEE et al.) 5 September 1989 (05.09.1989), see entire document. | 1-14 |
| X | US 3,978,606 A (RIGGS) 7 September 1976 (07.09.1976), see entire document. | 1-14 |
| A | US 4,841,665 A (MCGAHEE) 27 June 1989 (27.06.1989), see entire document. | 1-14 |
| A | US 4,873,783 A (MCGAHEE et al.) 17 October 1989 (17.10.1989), see entire document. | 1-14 |
| A | US 4,920,686 A (MCGAHEE et al.) 1 May 1990 (01.05.1990), see entire document. | 1-14 |
| A | US 5,664,364 A (CLARK) 9 September 1997 (09.09.1997), see entire document. | 1, 4, 7, 8, 10-12, 13 |

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

| | |
|---|--|
| * Special categories of cited documents: | "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 |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "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 |
| "E" earlier document published on or after the international filing date | "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 |
| "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) | "&" document member of the same patent family |
| "O" document referring to an oral disclosure, use, exhibition or other means | |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search
06 JULY 1998

Date of mailing of the international search report
19 AUG 1998

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231
Facsimile No. (703) 305-3230

Authorized officer *H. Aaron Meacham*
DARREN ARK
Telephone No. (703) 305-3733