A fishing rod fish self catching mechanism (1) is provided which has a base part (17) and a rod part (3). Biasing means (23) is provided between the base part (17) and the rod part (3) for applying a biasing force therebetween in a direction opposite to the fish biting pulling force applied to a fishing line carried by the rod part (3). A latching means (29) is provided to latch the biasing force, so that if there is a fishing biting pulling force applied to the fishing line, the latch means (29) will trip release and allow the bias force to move the rod part (3) in a direction opposite to the fish biting pulling force, thereby enabling a self catching movement to be imparted to the rod part.
A FISHING ROD
FISH SELF CATCHING MECHANISM

This invention relates to a fishing rod fish self catching mechanism and relates particularly but not exclusively to such mechanism incorporated in a fishing rod holder for holding a handle of a fishing rod.

Hitherto, holders for fishing rods have been known. Typically, these comprise an elongate tube into which the handle of a fishing rod can be inserted. The opposite end to the tube into which the handle is inserted is usually provided with a spike to enable the holder to be pushed into the ground to, in turn, anchor the holder and the rod in position. In some instances, the holder may include a clamp mechanism for clamping the holder to some convenient point such as to a chair or the like on which a fisherman may sit. Fishing rod holders of the above type usually require the person fishing to observe the fishing rod to note any deflection of the tip end of the rod thereby indicating that a fish is nibbling at the bait at the end of the line carried by the fishing rod. The person then usually has to remove the fishing rod from the holder and manually catch the fish.

It is desirable to provide an improved fishing rod fish self catching mechanism. Some non exclusive examples are in the form of a holder for a fishing rod.

Therefore according to a first broad aspect of the invention there is provided a fishing rod fish self catching mechanism comprising a base part and rod part, said base part being for supporting the rod part, there being a biasing means between the rod part and the base part for applying a biasing force therebetween in a direction opposite to a fish biting pulling force applied to a fishing line carried by said rod part, a latching
means for permitting latching of said mechanism so said bias force can be latched, and wherein, in use, should there be a fish biting pulling force applied to said fishing line, said latching means will trip release allowing the biasing force to move said rod part in a direction opposite to the fish biting pulling force thereby enabling a self catching movement to be imparted to the rod part.

In one example said base part and said rod part are separate to a fishing rod, said rod part being for coupling with a handle of the fishing rod to hold the fishing rod in the latched condition.

In an example, said rod part is a tube for receiving a handle of a fishing rod therein.

In order that the invention be more clearly ascertained, examples of embodiments of the invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a side elevation of a first example of a fishing rod fish self catching mechanism that is separate to a fishing rod. A fishing rod is shown inserted into the mechanism so it can be held thereby.

Figure 2 is a close-up part cross sectional view of the mechanism shown in Figure 1 in an unlatched condition.

Figure 3 is a view similar to that of Figure 2 showing the mechanism in a latched condition.

Figure 4 is a side elevational view of a second embodiment in a latched condition.

Figure 5 is a view similar to that of Figure 4
showing the mechanism in an unlatched condition.

Figure 6 is a side, part cross sectional, view of the mechanism shown in Figures 4 and 5.

Figure 7 is a view showing an example of a mechanism incorporated within a fishing rod and showing the mechanism in a latched condition and,

Figure 8 is a view similar to that shown in Figure 7 but showing the mechanism in an unlatched condition.

Referring firstly to the embodiment shown in Figures 1 - 3, it can be seen that a fishing rod fish self catching mechanism 1 is provided. The mechanism 1 comprises components manufactured from stainless steel to inhibit against corrosion. It is desirable to use stainless steel of a marine grade to inhibit corrosion. The use of other materials is not excluded. The mechanism 1 comprises an elongate tube 3 of 38mm in diameter which is of a diameter that enables a handle 5 of a fishing rod 7 to be freely inserted therein. The tube 3 is of a length that will accommodate a significant proportion of the length of the hand gripping portion of the handle 5 of the fishing rod. A reel 9 of the fishing rod is therefore maintained in an operative position at the forward end of the tube 3. A bolt 11 passes diametrically through the tube 3 and acts as a stop for the butt end of the handle 5 of the fishing rod 7. The bolt 11 also forms part of a latching mechanism as will be described hereinafter. The forward end 13 of the tube 3 is rolled to allow easy insertion of the handle 5. The opposite end of the tube 3 has a 4.5cm external diameter stainless steel coil spring 15 fastened thereto by a frictional fit and then by welding. The opposite end of the spring 15 is fastened to a base plate 17 such as by welding. The base plate is typically circular in shape, A ground spike 19 is, in
turn, fastened to the base plate 17 such as by welding. Typically, the ground spike 19 may be a 10mm diameter stainless steel rod of approximately 40cm in length. The free end of the ground spike 19 may be pointed to facilitate penetration entry into the ground.

The spring 15 acts as a flexible coupling for the tube 3 to enable it to swivel relative to the base plate 17. The stiffness of the spring 15 will also provide some degree of spring bias to the swinging movement of the tube 3. Figures 2 and 3 clearly show the fastening of the spring 15 to the lower end of the tube 3 and to the base plate 17 by welding 21. Figures 2 and 3 also show a biasing means 23 within the lower portion of the tube 3 and within the spring 15. The biasing means 23 typically comprises a stainless steel coil tension spring. The upper end of the coil spring is looped over the bolt 11, and the opposite end is looped through an eye bolt 25. The eye bolt 25 is typically provided of stainless material and has a threaded shaft over which a wing nut 27 is screwed threaded. The shaft of the eye bolt 25 passes through an opening in the base plate 17 and adjustment of the wing nut 27 can alter the tension that the biasing means 23 applies between the base plate 17 and the tube 3.

A latching arm 29 of generally 'L' shape is provided and mounted to the base plate 17. The latching arm 29 is manufactured from a stainless steel strip so that it has a lower leg 31 that extends at an abrupt angle relative to the length of the latching arm 29. The angle may be about 90°. The latching arm 29 is mounted to the base plate 17 by means of a coupling adapter 33 that is formed from a stainless steel 35 that passes through the base plate 17 and through the leg 31. The bolt 35 is provided with a lock type nut 37. A tubular biasing means 39 in the form of a coil spring is positioned over the bolt 35 and is fitted so as to press onto the upper surface of the leg 31.
of the latching arm 29. A wing nut 41 is screw threaded onto the bolt 35. A washer 43 is provided intermediate the wing nut 41 and the upper end of the biasing means 39. Accordingly, a biasing force can be imparted to the latching arm 29 in a controlled manner by adjusting the wing nut 41 to, in turn, apply pressure onto the leg 31 forcing it towards the base plate 17.

The bolt 11 that passes through the lower portion of the tube 3 carries a washer 45 which is held thereto by means of a lock type nut 47. The free end 49 of the latching arm 29 is arranged to locate between the washer 45 and the external surface of the tube 3 at the position of the bolt 11 to effect a latching of the mechanism 1 in a biased condition against the bias force (primarily provided by biasing means 23). Figure 3 shows the latching arm 29 latching the mechanism in this condition. The free end 49 has not been shown in Figure 3 to aid clarity, however, it is clearly shown in Figure 2. Figure 3 shows that the biasing means 23 is extended relative to that in the unlatched condition shown in Figure 2.

In use, a person will fasten the mechanism 1 to the ground by press forcing the ground spike 19 into the ground. The handle 5 of the fishing rod 7 can then be inserted into the upper end of the tube 3. Typically, the mechanism will be in the latched condition shown in Figure 3. The person will have cast the fishing line to a required position and then adjusted the tension in the line so that when the handle 5 is inserted into the tube 3, there will be slight tension applied from the line to the fishing rod 7. The latching arm 29 can be moved to the latched condition beforehand by the person grasping the tube 3 and flexing the spring 15 which couples the tube 3 relative to the base plate 17. The latching arm 29 can then be moved so the free end 49 locates under the washer 45 and holds the mechanism 1 in a latched
If a fish would bite, then a biting pulling force will be applied to the fishing line which will, in turn, cause the tube 3 of the mechanism 1 to swing about spring 15 in the direction of the biting pulling force applied to the line. This, in turn, will swing the tube 3 relative to the base plate 17 and allow the latching arm 29 to release from the latched condition. The biasing force applied by the biasing means 39 onto the latching arm will, in turn, cause the latching arm 29 to swing outwardly as shown by the arrow in Figure 2. The bias of the biasing means 23 will then, in turn, move the tube 3 in a direction opposite to the fish biting pulling force thereby enabling a self catching movement to be imparted to the fishing rod 7.

The example shown in Figures 1 - 3 also includes an auxiliary rest mechanism 51. The auxiliary rest mechanism 51 enables a forward resisting pressure to be applied to the outside surface of the tube 3 to assist in holding the mechanism in a latched condition. The auxiliary rest mechanism 51 also provides a bias force acting against fish biting pulling movements on the line that might otherwise falsely trip the mechanism into a latch releasing condition. This may be due to an insufficient bite by the fish to permit self catching by the mechanism. The auxiliary rest mechanism 51 comprises a stainless steel strip formed with a lower leg 53. The upper free end of the auxiliary rest mechanism 51 is provided with an arcuate shaped arm 55 that is curved to the curvature of the outer surface of the tube 3. The arm 55 is welded to the strip of the auxiliary rest mechanism 51. The auxiliary rest mechanism 51 is coupled to the base plate 17 by a coupling adapter 57 that has the same components as the coupling adapter 33 for the latching arm 29. For this reason, the components will not be described again.
In use, the wing nut of the coupling adapter 57 can be used to set a bias force against which a pulling force caused by biting of the fishing line must be overcome to then cause a swinging movement of the tube 3 which will effect un-latching of the latching arm 29.

The legs 31 and 53 of the respective latching arm 29 and auxiliary rest mechanism 51 are bent at an angle of about 90°. The exact angle can be adjusted to effect the required biasing and actions. Figure 3 shows some suggested angles of the respective legs 31 and 53. The arrangement is to provide for the necessary biasing forces to operate the latching arm 29 and the auxiliary rest mechanism 51.

Referring now to the embodiment shown in Figures 4, 5, and 6, there is provided a similar tube 3 for holding the handle 5 of the fishing rod 7 as in the previous embodiment. In this embodiment, the tube is pivoted about an axle 59 which also acts as a stop for the butt end of the handle 5. The axle 59 is, in turn, carried by a pair of upright rods 61. The rods 61 have heads 63. The axle 59 is welded to the heads 63 and the tube 3 can swing about the axle. The lowermost ends of the arms 61 are welded to an interconnecting plate 65. The arms 61 and the interconnecting plate 65 therefore form a 'U' shaped support for the tube 3. The tube 3 can therefore swing between the arms 61. A ground spike 19 is welded to the interconnecting plate 65 to permit the mechanism to be pushed into the ground.

A trigger mechanism, shown generally by numeral 67, is provided to hold the mechanism in a latched condition. The trigger mechanism is shown best in Figure 6 where it can be seen that it has a central horizontally disposed axle 69 that is supported by two heads 71 that are mounted respectively to respective ones of the arms 63 at a
position about midway between the free ends and the interconnecting plate 65. The exact position of the mounting is not critical. The heads 71 are welded to the upright arm 61 and the axle 69 passes through suitable axle openings in the heads 71. The axle 69 can be welded to the heads 71 to hold it in position. The axle 69 carries a sleeve 73. The sleeve 73, in turn, carries a block 75 that is welded thereto. The block 75 has a threaded bore therein to receive a threaded eye bolt 77. The lower end of the tube 3 carries a wear plate 79 that is fastened thereto such as by welding. Latching is effected by swinging the trigger mechanism 67 so that free end of the eye bolt 77 locates against the wear plate 79. Figure 4 shows the arrangement where the shaft of the eye bolt 77 extends orthogonally to the wear plate 79. The wear plate 79 may have a small detent therein (not shown) to assist location of the free end of the eye bolt 77 with the wear plate 79.

The mechanism includes a spring biasing means in the form of a coil spring 81. The upper end of the coil spring 81 is hooked over the axle 59, and the lower end of the coil spring is hooked through an eye bolt 83 which passes through the interconnecting plate 65. The interconnecting plate 65 has an elongate opening therein to facilitate passing of the shaft of the eye bolt 83 therethrough. This allows some relative swinging motion of the shaft of the eye bolt 83, relative to the interconnecting plate 65. A wing nut is screw threadably carried on the shaft of the eye bolt 83, and adjustment of the wing nut 85 can control the amount of extension of the coil spring of the biasing means 81. Thus, a control on the biasing forces can be applied to control the amount of pressure applied from the wear plate 79 onto the shaft of the eye bolt 77 which together form the trigger mechanism 67.
In use, the mechanism is operated in a similar manner to that described previously. Here, a person will cast the fishing rod and then take up the slack in the line and at the same time insert the handle 5 into the tube 3. The tube 3 can be swung about the axle 59 and the trigger mechanism 67 operated by raising the head of the eye bolt 77 so that the free end of the threaded shaft of the eye bolt 77 engages with the wear plate 79 to assume the latched position shown generally in Figure 4. It should be appreciated that in Figure 4, the threaded shaft of the eye bolt 83 has swung relative to the interconnecting plate 65 shown diagrammatically. This should be contrasted with the position of swing shown in Figure 5 where the shaft of the eye bolt 83 is generally more orthogonal relative to the interconnecting plate 65. Figure 5 shows the trigger mechanism 67 released where the head of the eye bolt 77 has swung downwardly by gravity as shown by the direction of the arrow, thereby allowing the free end to disengage with the wear plate 79 and permit the swinging of the tube 3. The bias of the biasing means 81 will control the speed of recoil of the tube 3 in a direction opposite to the pulling direction of any biting force applied to the line of the fishing rod. The swinging is therefore in a direction opposite to the direction of biting. Typically, all the components shown in the second embodiment are made of stainless steel to avoid unwanted corrosion. This does not exclude other materials from being used.

By reviewing the embodiments of Figures 1 - 3, and 4 - 6, it should be appreciated, that these embodiments are where the mechanism is separate to the fishing rod. In these two cases, the mechanism has a base part being the base plate 17 and a rod part being the tube 3. There is biasing means between the rod part and the base part being biasing means 23, or biasing means 81. The biasing means applies biasing forces between the base part and the rod.
part in a direction opposite to a fish biting pulling force applied to a fishing line. The latching means permits latching of the mechanism so that the bias force can be latched. Thus, if there is a fish biting pulling force applied to the fishing line, this will translate through the mechanism 1 to trip release the latching mechanism allowing the bias force to move the rod part in a direction opposite to the fish biting pulling force thereby enabling a catching movement to be imparted to the rod part.

Referring now to the example shown in Figures 7 and 8, it can be seen that the mechanism is incorporated wholly within a fishing rod itself. Here, the fishing rod has a handle part 91 and a rod part 93. In this case, the handle part 91 is equivalent to the base part referred to previously. Here, the rod part 93 is equivalent to the rod part described previously. A latching mechanism is provided between the base part and the rod part to latch the fishing rod in an operative condition. Biasing means 95 in the form of a coil spring interconnects the handle part 91 and the rod part 93. The biasing means 95 is preferably a coil spring so as to provide flexibility and a spring bias force between the handle part 91 and the rod part 93. In this case, the latching means comprises a spring finger 97 such as of spring metal sheet. The metal may be spring steel, brass or other suitable material. The requirement is to be flexible and to simultaneously provide a biasing latching force. The rod part 93 is provided with a latching head 99. Thus, the trigger mechanism can be set by flexing the biasing means 95 to cause the rod part 93 to assume a biased disposed position relative to the handle 91. This is shown in Figure 7. Here, the free end of the finger 97 is latched under the head 99 and holds the fishing rod in an operative latched condition. Figure 8 shows the arrangement when a fish biting pulling force has been applied to the rod part 93.
thereby flexing the rod part 93 further away from a normal latched condition and allowing the free end of the finger 97 to slip away from the head 99. The bias forces exerted by the biasing means 95 will then cause the rod part to move in a direction opposite to the fish biting pulling force to enable a self catching movement to be imparted to the rod part 93. This is shown by the dotted lines in Figure 8. The finger 97 may be fastened relative to the handle 91 by means of a thumb screw 101. The thumb screw 101 may be released to enable the finger 97 to be removed to facilitate cleaning of the rod and the trigger mechanism.

Modifications may be made to the invention as would be apparent to persons skilled in producing fishing rods and like components. In addition, modifications may be made for mounting of the various components of the mechanism as would be apparent to persons skilled in the art of metal fabrication techniques.

It is to be understood that, if any prior art publication is referred to herein, such reference does not constitute an admission that the publication forms a part of the common general knowledge in the art, in Australia or any other country.

In the claims which follow and in the preceding description, except where the context requires otherwise due to express language or necessary implication, the word "comprise" or variations such as "comprises" or "comprising" is used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features in various embodiments of the invention.
CLAIMS

1. A fishing rod fish self catching mechanism comprising a base part and rod part, said base part being for supporting the rod part, there being a biasing means between the rod part and the base part for applying a biasing force therebetween in a direction opposite to a fish biting pulling force applied to a fishing line carried by said rod part, a latching means for permitting latching of said mechanism so said bias force can be latched, and wherein, in use, should there be a fish biting pulling force applied to said fishing line, said latching means will trip release allowing the biasing force to move said rod part in a direction opposite to the fish biting pulling force thereby enabling a self catching movement to be imparted to the rod part.

2. A mechanism as claimed in claim 1, wherein said base part and said rod part are separate to a fishing rod, said rod part being for coupling with a handle of a fishing rod to hold the fishing rod in the latched condition.

3. A mechanism as claimed in claim 2, wherein said rod part is a tube for receiving a handle of a fishing rod therein.

4. A mechanism as claimed in any one of the preceding claims, wherein said biasing means comprises a tension spring.

5. A mechanism as claimed in any one of the preceding claims, wherein said biasing means includes bias adjusting means whereby the magnitude of the biasing force can be adjusted by a user.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

AOIK 97/11 (2006.01) AOIK 87/02 (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)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

EPODOC, WPI: (a) IPC AOIK 97/- and AOIK 87/-, with keywords (rod, biasing, latching) & like terms; (b) USPC 43/15 and 43/16

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of Box C

Date of the actual completion of the international search 25 June 2009

Date of mailing of the international search report 7 JUL 2009

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## DOCUMENTS CONSIDERED TO BE RELEVANT

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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX