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950,227

PATENT SPECIFICATION

DRAWINGS ATTACHED

950,227

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Index at acceptance:—A1 A(26A, 26D)

International Classification:—A 01 k

COMPLETE SPECIFICATION

Improvements in Fishing Reels

I, KENNETH PATRICK MORRITT, of Intrepid Works, Sunningdale Road, Cheam, Surrey, a British Subject, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to fishing reels and primarily fishing reels for use in fly fishing. The usual types of fly reel is made up of two main parts: a cage type body or casing which constitutes a housing for a spool fitted axially with a toothed-check wheel, usually a ratchet wheel, which operates against a pawl mounted inside the body. Generally the pawl is adapted to give more resistance when line is being drawn off the reel than when the line is being reeled.

In order to cast a fly line by the accepted method, it is necessary to strip line from the reel by the left hand, and by a backward and forward movement of the rod the line is cast. When sufficient line has been stripped from the reel the line is then thrown forward by the rod and allowed to settle on the water. When a fish becomes hooked it is then played directly from the reel in that when it rushes away it is tired by the resistance of the ratchet mechanism aforesaid plus, if necessary, the application of a finger to the exposed rim of the spool, and when the opportunity occurs the fish is wound in by revolving the spool by the handle provided.

The noise made by a ratchet mechanism is in many instances objectionable, particularly when fishing at night.

The object of the present invention is to obviate the aforesaid objection and to this end, according to the invention, a fishing reel primarily intended for fly fishing and having a normal primary ratchet check-wheel and pawl mechanism is characterised in that the ratchet check wheel is engaged additionally by a secondary toothed check-wheel, a free wheel mechanism being associated with the secondary check wheel and a friction brake forming part of the free wheel mechanism, and means are provided for the adjustment of braking pressure exerted by the friction brake. Means may be provided for dis-engaging completely said pawl from said primary ratchet check-wheel.

The secondary check-wheel has pinion teeth and comprises an outer ring part and an inner hub part, between which are recessed a series of balls or rollers comprising a free-wheel. The secondary check-wheel is movable axially against a spring washer which serves as a resistance member, the pressure being adjustable by external control.

In order that the invention may be clearly understood and readily carried into effect, reference is drawn to the accompanying drawings wherein:—

Figure 1 shows in plan a reel according to the invention.

Figure 2 is a front elevation of Figure 1.

Figure 3 is a similar view to Figure 2 of the reverse side thereof and

Figure 4 is a section on the line IV—IV of Figure 2.

Figure 5 is a front view of the interior of the fishing reel casing with the reel removed.

Figure 6 is a transverse section to a larger scale on the line VI—VI of Figure 5.

Figure 7 is a side view of Figure 6 looking in the direction of the arrow.

One preferred arrangement according to the invention is illustrated in the drawings and comprises a fishing reel consisting of a cage-type body or casing 9 of circular dish form which houses a rotatable spool 10 mounted on an arbor 11 fixed centrally inside the outer casing and held in position by a latch device 12, the spool being rotatable on the arbor 11 by means of a handle 13 all of which is of known construction. The spool

10 is formed on its inner side facing the back of the casing with a ratchet check-wheel 14 i.e. a primary check-wheel, engagable with a spring loaded pawl 15 mounted on the inside back of the casing 9 so that rotation of the spool 10 causes a clicking action as the ratchet wheel 14 passes over the pawl 15.

In the construction according to the invention the primary ratchet check-wheel 14 is engaged by a secondary toothed check-wheel 16 rotatably mounted on a shaft 17 disposed on the inside back of the reel casing 9, radially disposed from the axis of the spool and in a position diametrically opposite to the pivot of the pawl 15.

The primary ratchet wheel 14 which forms part of the spool 10 is, in accordance with the present invention, engaged by pawl 15 which is conveniently triangular-shaped, the apex of wich engages the ratchet wheel-teeth and the flat base of which is engaged by one end of a hairpin-shaped spring 18, the other end of which contacts the inner wall of the casing. The bend 18*a* of the spring is mounted on a fixed post 19 secured to the back of the casing. In addition, a second fixed post 19*a* is secured to the back of the casing and provides an alternative anchorage for the hairpin spring 18, the arrangement being such that in one position of the spring there is soft pressure on the ratchet, whereas in the other position of the spring the pressure is greater, the spring being optionally placed to suit the user of the reel. The pawl 15 is disengagable from the ratchet by rotation on its pivot by means of a finger piece 20 at the exterior of the casing at the back thereof. The secondary toothed check-wheel 16 comprises an outer ring part 16*a* and an inner hub part 16*b*, the outer part being toothed to engage the primary check-wheel 14. The outer ring part 16*a* of the secondary check-wheel is shaped to hold a series of balls 21 (or rollers) in recesses 22 in the hub part 16*b*, the recesses 22 being in the form of ramps, thus constituting a free-wheel, permitting freedom of movement in one direction of the outer ring part 16*a* of the secondary check-wheel relative to the inner hub part 16*b* but causing in the other direction locking engagement of the two parts of the check-wheel. The inner hub part 16*b* is in frictional engagement with a flat spring washer 23, one side of which engages the face of the inner hub part 16*b* of the check-wheel and the other side bearing against the inner face of the rear wall of the casing 9 to form in effect a brake. The shaft 17 has a flange 24 at its inner end and a finger piece 25 disposed exteriorly of the casing, a screw 26 retaining the assembly in place. The finger piece 25 has a screw-threaded connection with the shaft 17 which is keyed to the casing 9 so that upon a screwing movement of the finger piece 25 in a clock-wise direction the check-wheel 16 is drawn towards the back of the casing, whereby compressing the spring washer 23 to create additional braking resistance as required. The finger piece 25 is movable over a dial 28 to give indications of the degree of pressure applied, the finger piece being used as a nut for tightening or loosening the friction brake assembly.

The invention provides an optional ratchet mechanism the standard ratchet wheel being engaged by a secondary toothed check-wheel constituted as a free wheel which permits free running in one direction but in reverse is adapted to actuate a brake under a variable tension controlled by a pre-set control finger which can be set from nought to maximum resistance.

The advantages are that the reel can be used as a conventional fly reel by utilising the normal ratchet and pawl mechanism, or it can be used with the ratchet dis-engaged and the optional ratchet mechanism used with the brake control finger set at a chosen degree or both together. When retrieving line by winding the spool, there will be no resistance, but upon playing out the line, the resistance can be adjusted; in both instances the running of the line takes place silently due to the dis-engagement of the pawl of the normal ratchet and pawl mechanism.

WHAT I CLAIM IS:—

1. A fishing reel having a primary ratchet check wheel and pawl mechanism wherein the primary ratchet check wheel is engaged additionally by a secondary toothed check-wheel, a free wheel mechanism being associated with the secondary toothed check wheel and a friction brake forming part of the free wheel mechanism, and means are provided for the adjustment of the braking pressure exerted by the friction brake.

2. A fishing reel as claimed in claim 1 including means for dis-engaging completely said pawl from said primary ratchet check-wheel.

3. A fishing reel as claimed in claim 1 or claim 2 wherein the secondary check-wheel has pinion teeth and comprises an outer ring part and an inner hub part, between which are recessed a series of balls or rollers comprising a free wheel.

4. A fishing reel as claimed in any one of the preceding claims wherein the secondary check-wheel is movable axially against a spring washer which serves as a resistance member of the friction brake, the pressure exerted between the washer and the secondary check wheel being adjustable by an external control.

5. A fishing reel as claimed in claim 3 wherein the outer ring part is toothed to engage the primary check wheel and the inner hub part has ramped recesses each to hold a ball or roller thus constituting a free-wheel

in conjunction with the outer ring part and permitting freedom of movement of the outer ring part in one direction of rotation but causing in the reverse direction locking engagement of the two parts of the secondary check wheel the said check-wheel being mounted on a shaft rotatable in the reel casing.

6. A fishing reel as claimed in claim 3 and claim 4 wherein the spring washer is positioned to engage the face of the hub of the secondary check-wheel and the inner face of the rear wall of the casing of the fishing reel to form the friction brake.

7. A fishing reel as claimed in claim 5 or claim 6 wherein the shaft has a flange at its inner end and a finger piece disposed exteriorly of the casing the finger piece having a screw thread connection to the shaft so that upon a rotary movement of the finger piece the secondary check wheel is drawn towards the back of the casing, thereby compressing the spring washer to create additional resistance as required.

8. The improved fishing reel substantially as herein described with reference to the accompanying drawings.

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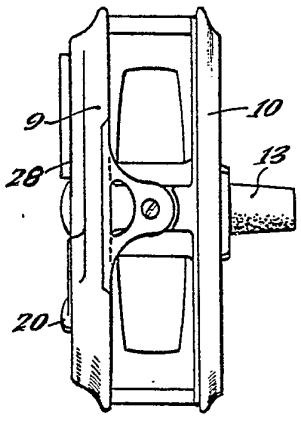


Fig. 1.

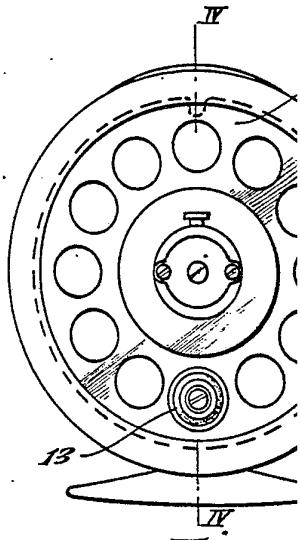
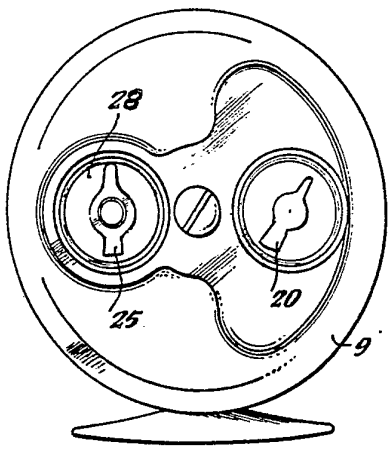


Fig. 2.



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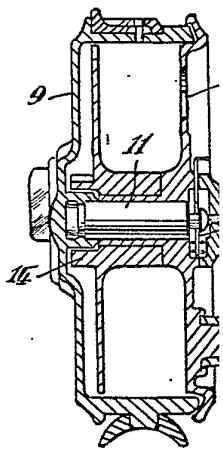


Fig. 4.

950227 COMPLETE SPECIFICATION

2 SHEETS *This drawing is a reproduction of the Original on a reduced scale*

Sheets 1 & 2

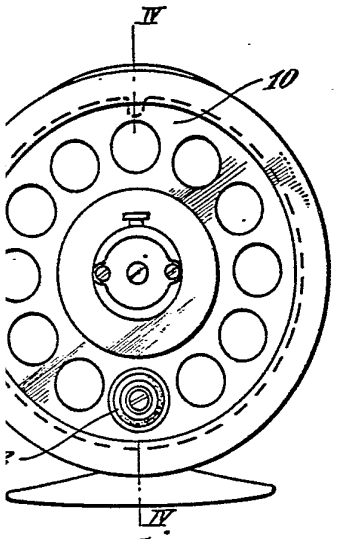
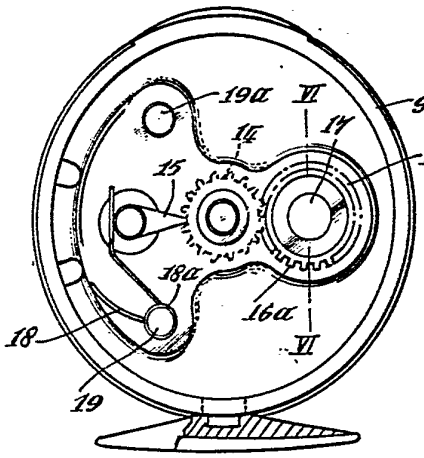


Fig. 2.



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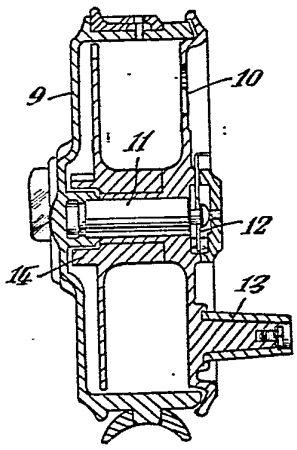

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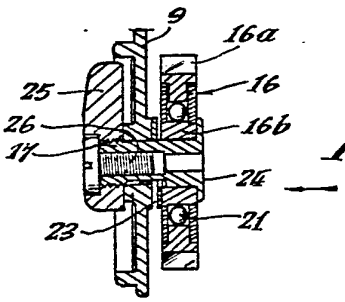

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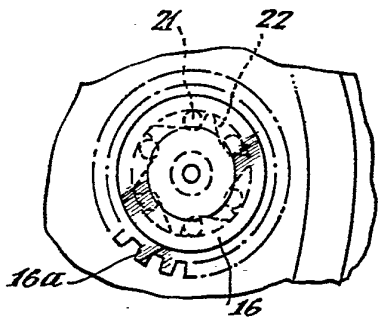

Fig. 7.

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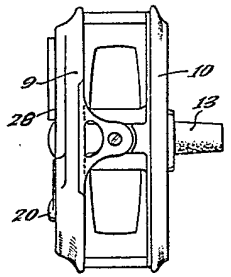

Fig. 1.

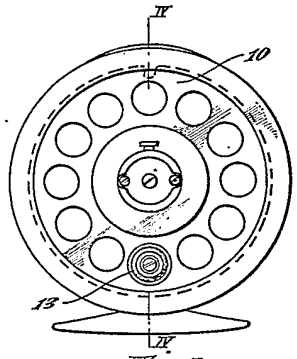

Fig. 2.

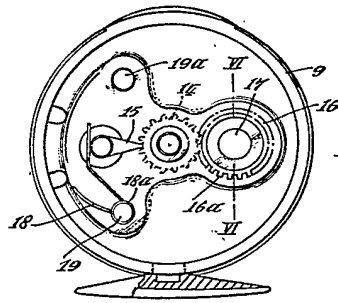

Fig. 5.

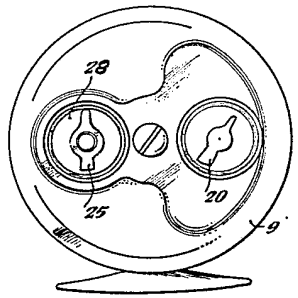

Fig. 3.

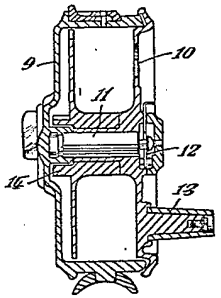

Fig. 4.

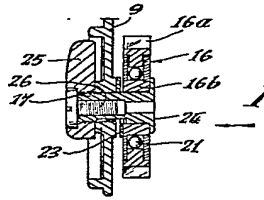

Fig. 6.

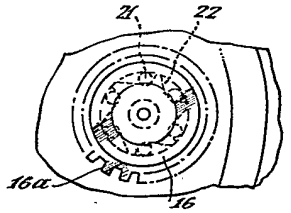

Fig. 7.