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# PATENT SPECIFICATION 706,790

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*Complete Specification Published : April 7, 1954.*

Index at Acceptance :—Class 48, O.


COMPLETE SPECIFICATION.

## Improvements in or relating to Fishing Reels.

I, JOSEPH BRINDLEY GURNEY GRICE, a British Subject, of The Cottage, Seafield Road, Friars Cliff, Christchurch, Hampshire, 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 of the kind which include a support usually in the form of a circular cover or side plate adapted to be secured to the handle of the fishing rod, the side plate carrying a centrally arranged spindle on which the spool or reel proper is revolvably mounted, the spool being capable of easy removal and being normally secured in position by a securing screw or other securing device.

It is essential for the efficient operation of the reel that the spool bearings and clicker mechanism if such is provided shall be oiled periodically and the chief object of the invention is to associate with the reel an oiling device which will be unobtrusive and will in no way adversely affect the use of the reel but will be easily accessible when it becomes necessary to lubricate the bearings and other working parts.

A fishing reel including a circular side plate or cover adapted to be secured to the handle of a fishing rod and carrying a centrally arranged spindle carrying in turn the spool or reel in a readily removable manner is characterised according to the invention by a lubricant reservoir formed in the side plate, the reservoir being closable by a closure plug situated on the inside of the side plate nearest the spool and only accessible for removal when the spool has been removed. The plug carries a brush or wick or other device which is normally housed within the reservoir but can be used to apply lubricant to the parts drop by drop.

In order that the invention may be clearly understood and readily carried into effect the invention is hereinafter described with reference to the accompanying drawings in which:—

Figures 1 and 2 illustrate opposite sides of the fishing reel;

Figure 3 is a view of the internal mechanism, the spool having been removed;

Figure 4 is a view of the inner clicker end of the spool;

Figure 5 is a fragmentary view to an enlarged scale showing the spool retaining lever and associated spring;

Figure 6 is a section to an enlarged scale on the line A—B in Figure 3 but with the spool in position;

Figure 7 is a section to an enlarged scale on the line C—D in Figure 3, the wick-carrying closure plug being also shown removed and in perspective.

In the preferred embodiment illustrated the fishing reel comprises a side plate or cover generally indicated by reference numeral 1 which is adapted to be secured to the handle of the fishing rod, the side plate being in the form of a die-pressure metal casting. The side plate carries at its centre point a spindle 2 on which the spool or reel proper is revolvably mounted, the latter being generally indicated by reference numeral 3. The spool is retained in position on the spindle in a readily detachable manner by means of a finger operated lever 4 pivoted at 5 and adapted to enter an annular groove 6 formed in the spindle near its outer end, the lever being urged into its spool retaining position by means of a spring 7. The contruction of this lever and its associated spring is clearly shown in Figure 5.

The side plate 1 is of dished formation, the adjacent flange of the spool serving to close the dished side plate when the spool is in position, but leaving an intermediate space which contains the clicker and braking

[*Price* 2*s.* 8*d.*]

mechanisms which will hereinafter be described in detail and also a reservoir for containing lubricant.

As the side plate is in the form of a die-casting it is proposed to construct the lubricant reservoir 8 as an integral part and during the die-casting process, the reservoir as is shown clearly in Figure 7 including a cylindrical hole 9 in a thickened part of the plate the bore being permanently closed at its outer end by means of a separately formed plate 10 and temporarily closed at its opposite end by means of an externally screw threaded removable closure plug 11. The closure plug 11 carries a brush or wick 12 by which the lubricant contained in the reservoir can be applied to the mechanism when required.

The plate or disc 10 can be formed from thin metal, or alternatively from a transparent material the disc being adhesively or otherwise secured in position to prevent escape of the lubricant, the edges of the metal immediately surrounding the disc being recessed to receive the edge of the disc, and if necessary, swaged over the periphery of the disc to secure the disc in position. Alternatively, the disc may be initially curved so that it can enter the recess easily and subsequently flattened to increase its area sufficiently to maintain its position therein. The disc may carry a name plate secured in position by means of a centrally arranged rivet.

Referring now to the mechanism of the fishing reel which will require to be lubricated from time to time, the spool carries the usual clicker wheel 13 on its inner face which is engageable by a clicker pawl 14, the latter being carried by an arm or lever 15 which is pivoted on a trunnion 16 on the side plate, the pawl being urged into operative engagement with the clicker wheel by means of a spring 17.

Engagement of the pawl with the clicker wheel is under the control of a finger actuated lever 18 carried by a pivot pin 19, the lower end 18*a* of the lever carrying at its extremity a roller 20 which engages the member 15 near its free end. By moving the lever 18 through substantially 90° into a position in which the parts 18*a* and 15 lie at right angles the part 15 will be maintained against the action of its associated spring in a position in which the pawl will be held out of operative engagement with the clicker wheel.

The lever 15, the pawl 14 and spring 17 form virtually a single unit, the pawl being readily removable for replacement purposes and according to one feature of the invention this unit is maintained in position in a readily removable manner by means of a retainer spring 21 pivotally mounted on a pin 22, the arrangement being such that normally the spring 21 overlies the inner end of the lever 15 so as to retain it in position upon the trunnion 16, but can be swung clear of that member to permit a removal of the unit, for example, for replacement of the pawl. The spring 21 is a simple form of thin blade spring and also performs the function of maintaining a spare clicker pawl 14*a* in position on a post 23. It will be appreciated that this spare pawl can easily be substituted for the pawl 14 when the latter becomes unduly worn.

The spindle 2 carries a loosely mounted brake drum 24 which may take the form of a synthetic resin moulding, the drum being formed with two kidney shaped recesses 25 which are entered by the heads of two screws 26 associated with the spool which screws serve to hold the clicker wheel in position thereon, the drum being thus driven by the spool as it rotates. A spring 27 engages the periphery of the drum 24 for the purpose of exerting a frictional drag on the spool during its rotation and as it is preferred that the degree of drag shall be capable of variation as required, a finger actuated lever 28 is mounted on the outer face of the side plate which lever is angularly movable through an arc, the lever carrying an eccentric 29 disposed on the inner face of the side plate which eccentric engages the spring 27. Angular movement of the lever 28 varies the effectiveness of the eccentric and consequently increases or decreases the frictional pressure between the spring 27 and its co-operative drum 24.

It is preferred that drag on the spool shall be applied in two stages and it is proposed, therefore, to construct the spring 27 of elongated U-shape. As will be seen clearly from Figure 3 one limb of the spring 27 is anchored to the pin 22 and engages the eccentric, whilst the other limb engages the drum 24. A small gap of approximately ·050 inches indicated by reference numeral 30 is left between the two limbs and consequently during the initial stages of movement of the lever 28 pressure on the drum 24 will be dependent upon the resiliency of the limb in contact with the drum, but on further movement of the lever 28 to increase the drag the gap will be closed and consequently the drum engaging limb will be urged more firmly into frictional engagement with the drum's periphery, thus materially increasing the spool drag.

It will be appreciated from the foregoing description that once the spool has been removed all the component parts of the fishing reel will be exposed to view and can be lubricated as required, whilst the reservoir being mainly situated on the inner face of the side plate does not detract to any material extent from the comparatively smooth external appearance of the reel.

What I claim is:—

1. A fishing reel including a circular side plate or cover adapted to be secured to the handle of a fishing rod and carrying a centrally arranged spindle carrying in turn the spool or reel in a readily removable manner, characterised by a lubricant reservoir formed in the side plate, the reservoir being closable by a closure plug situated on the inside of the side plate and only accessible for removal when the spool has been removed.

2. A fishing reel as claimed in Claim 1, wherein the side plate is in the form of a die-casting the lubricant reservoir being formed in the side plate in the normal die-casting process.

3. A fishing reel as claimed in Claim 1 or 2, wherein the lubricant reservoir consists of a cylindrical hole in the side plate permanently closed on the outside of the side plate by a separately formed closure plate, and temporarily closed on the inside of the side plate by an externally screw-threaded closure plug.

4. A fishing reel as claimed in any of the preceding claims wherein the closure plug carries a brush which is removable from the reservoir with the plug and for applying the lubricant.

5. A fishing reel as claimed in any of the preceding claims and including an arm or lever carrying a clicker pawl and spring removable as a unit, characterised by a spring blade retainer for holding the unit in position but permitting easy removal.

6. A fishing reel as claimed in Claim 5, wherein the spring blade retainer also serves the purpose of holding a spare clicker pawl in position on a support.

7. A fishing reel as claimed in any of the preceding claims including braking mechanism including a friction drum revolvable with the spool, a spring arm engaging the periphery of said drum and an eccentric engaging said spring arm to increase or decrease the braking effect according to the angular position of the eccentric, characterised in that the spring arm is of elongated "U" formation, one limb engaging the eccentric and the other limb engaging the friction drum, the limbs being separated by a small gap which is closed as the effectiveness of the eccentric increases consequent upon angular adjustment in the appropriate direction so that drag can be applied to the spool in two stages.

8. A fishing reel of the kind set forth having its component parts constructed, arranged and adapted to operate substantially as and in the manner hereinbefore described with reference to the accompanying drawings.

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## PROVISIONAL SPECIFICATION.

## Improvements in or relating to Fishing Reels.

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This invention relates to fishing reels of the kind which include a support usually in the form of a circular cover or side plate adapted to be secured to the handle of the fishing rod, the side plate carrying a centrally arranged spindle on which the spool or reel proper is revolvably mounted, the spool being capable of easy removal and being normally secured in position by a securing screw or other securing device.

It is essential for the efficient operation of the reel that the spool bearings and clicker mechanism if such is provided shall be oiled periodically and the chief object of the invention is to associate with the reel an oiling device which will be unobtrusive and will in no way adversely affect the use of the reel but will be easily accessible when it becomes necessary to lubricate the bearings and other working parts.

A fishing reel in accordance with the present invention is fitted with a reservoir for lubricant carried by the side plate or other spool support. It is preferred furthermore, that the reservoir shall contain a wick or other device by which the oil or other lubricant can be applied to the part requiring lubrication.

As it will generally be necessary to remove the spool from the side plate or other support to obtain access to the bearings and other parts it is proposed that removal of the spool shall disclose a removable closure plug which normally seals the reservoir against the escape of lubricant, the plug carrying a wick or other device which is normally housed within the reservoir but can be used to apply lubricant to the parts drop by drop.

If formed integrally with the side plate, the reservoir and side plate may be a pressure die casting, the reservoir being in the form of an inwardly dished depression in the side plate and offset from its centre, the bottom of the depression having an internally screw threaded opening for the entry of the threaded closure plug. The depression may be closed to form an oil reservoir by a disc like closure member which can be formed from thin metal, or alternatively from a transparent material, the closure member being adhesively or otherwise sealed in position to prevent escape of lubricant, the edges of the metal immediately surrounding the depression being recessed to receive the closure member and if necessary swaged over to secure the closure member in position. Alternatively, the closure member may be initially curved so that it can enter the recess easily and subsequently flattened to increase its area sufficiently to maintain its position.

As a further alternative the reservoir may be constructed separately as a die casting, pressing or other suitably formed component and inserted in a hole or boring in the side plate.

In the case of a pressed sheet metal side plate the latter may be pressed inwardly to form a shallow depression closable by a sheet metal closure plate welded, brazed or otherwise secured in position.

With any of the constructions proposed the reservoir will lie substantially flush with the exterior surface of the side plate, will not project inwardly to any considerable extent, it being unnecessary to make the reservoir of large size, whilst in the case of the closure member being composed of transparent material the quantity of oil in the reservoir can be ascertained at a glance.

In the case of a reel in which the spool is held in position by a single centrally arranged screw, removal of the screw will enable the spool to be removed from the spindle, thus exposing the bearings, clicker mechanism and other parts requiring lubrication which parts can then be easily lubricated with the help of the oiling device contained in the reservoir.

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Fig.1.

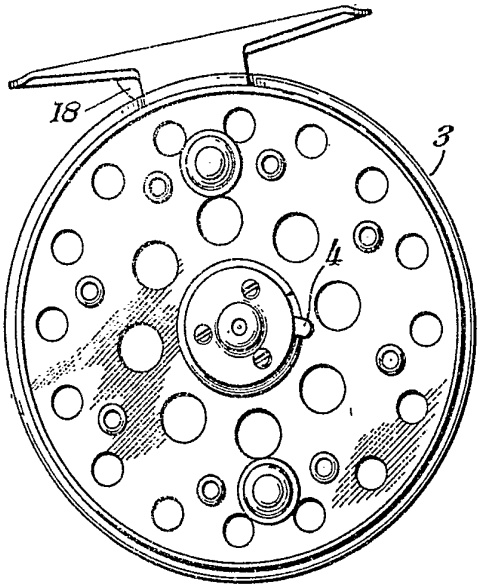



Fig.2.

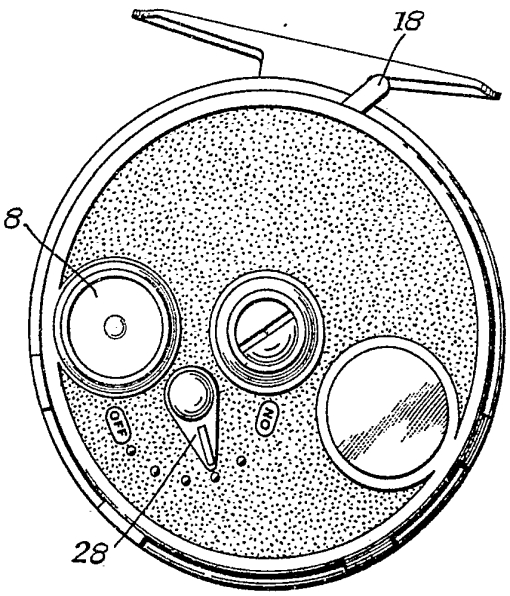



Fig.3.

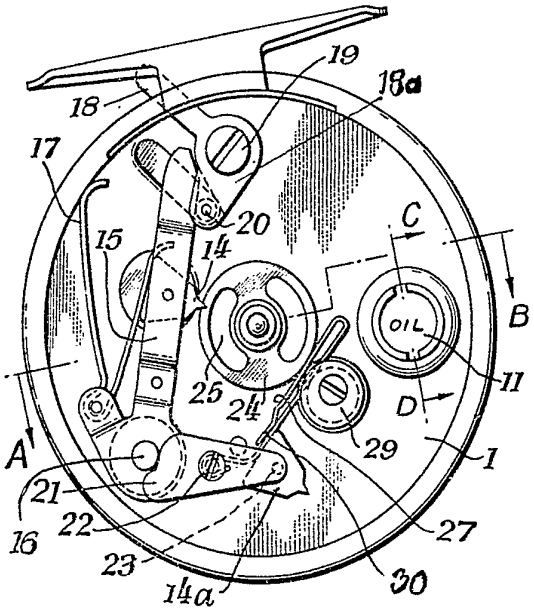
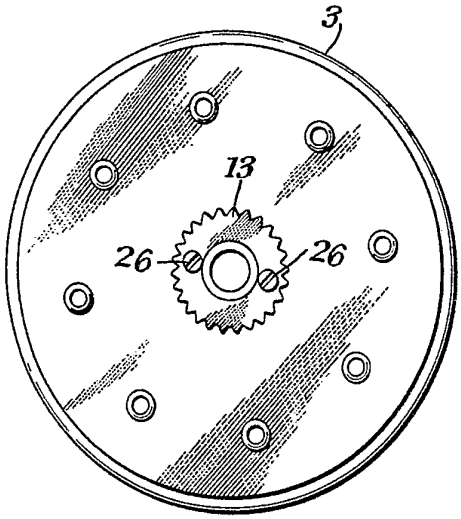


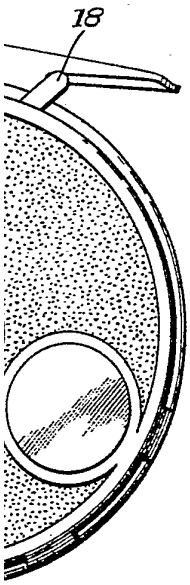

Fig.4.

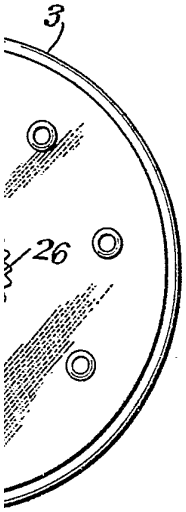


706,790 COMPLETE SPECIFICATION
2 SHEETS

This drawing is a reproduction of the Original on a reduced scale.

SHEETS 1 & 2



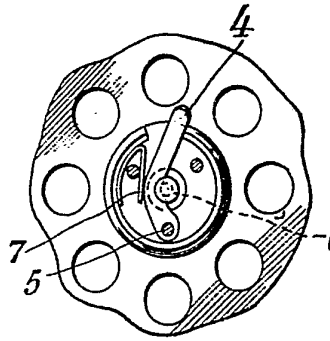




Fig.5.

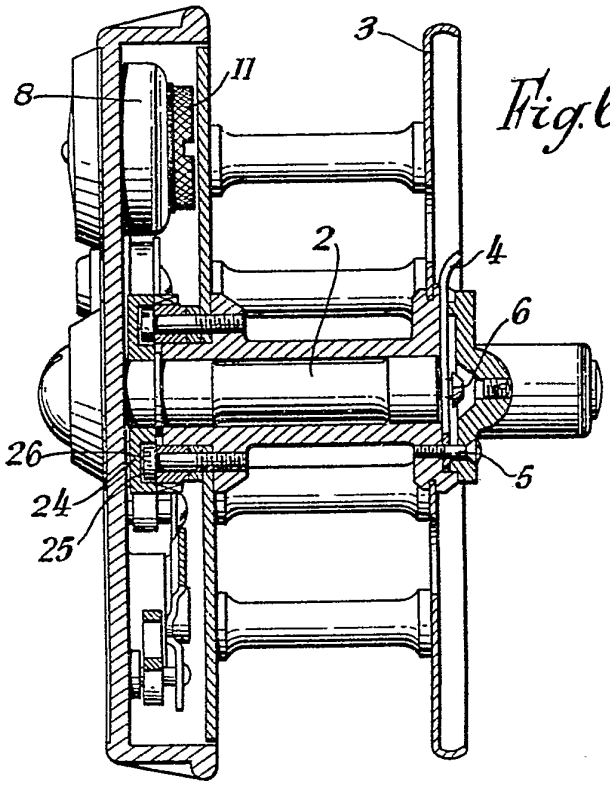



Fig.6.

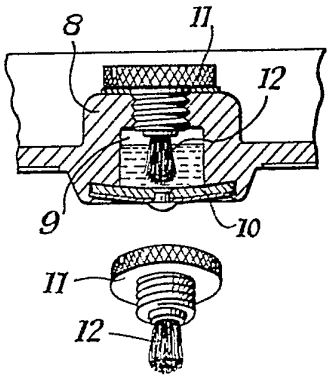



Fig.7.

706,790 COMPLETE SPECIFICATION
2 SHEETS

This drawing is a reproduction of the Original on a reduced scale.

SHEETS 1 & 2

Fig.1.

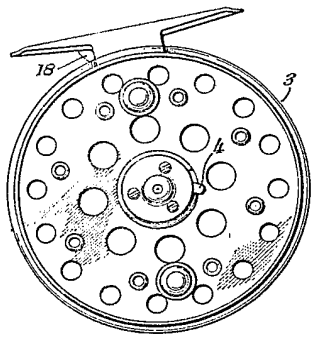



Fig.2.

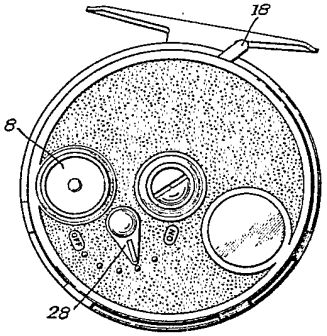



Fig.3.

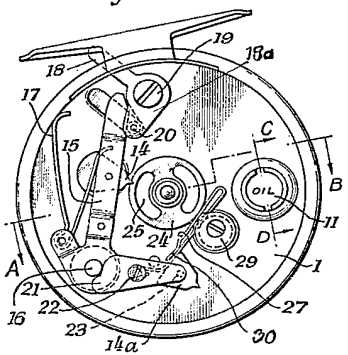



Fig.4.

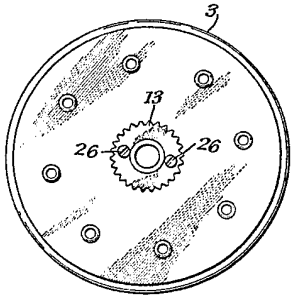



Fig.5.

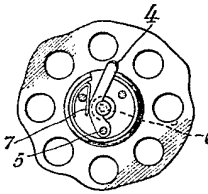



Fig.6.

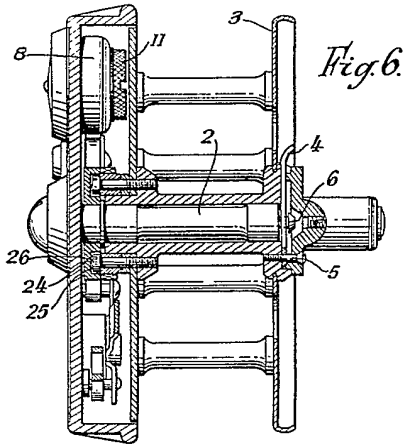



Fig.7.