No. 742,376. PATENTED OCT. 27, 1903.

A. J. ARNOLD.

FISHING REEL.

APPLICATION FILED NOV. 22, 1902.

NO MODEL.

Fig. 1.

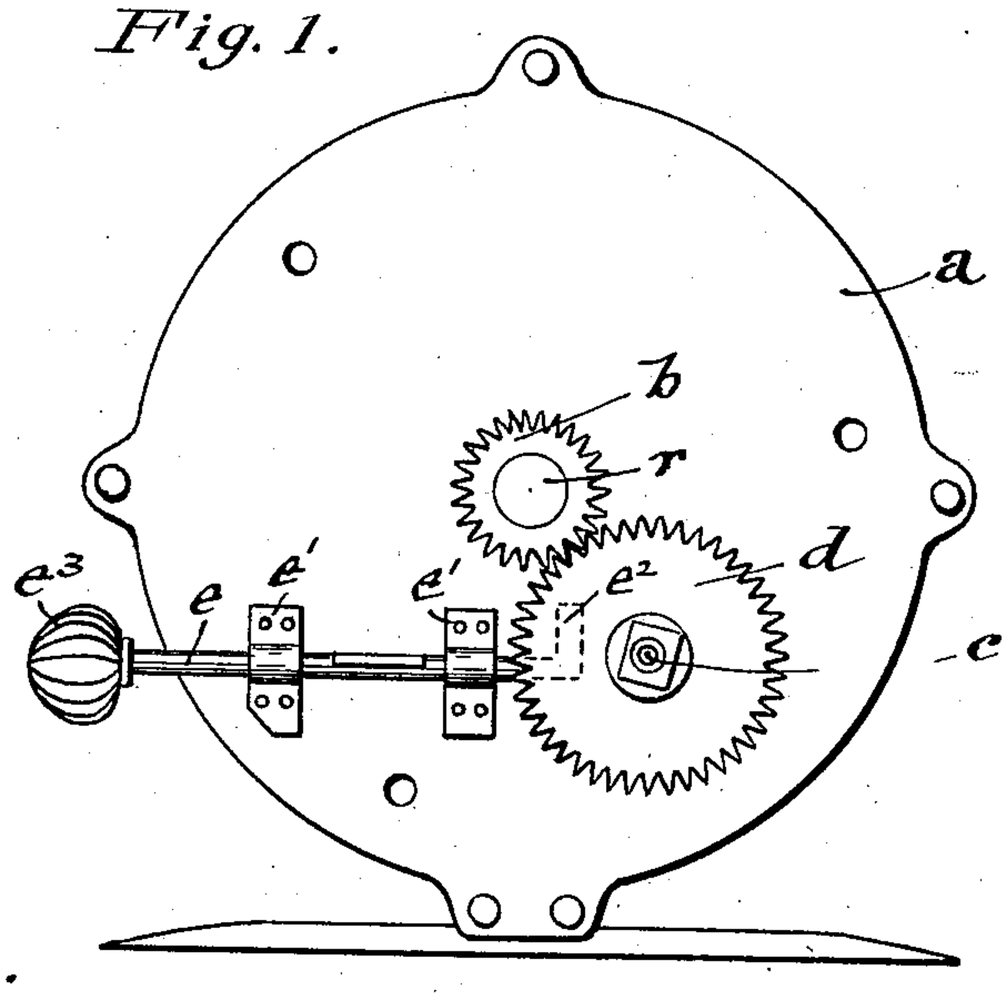



Fig. 2.

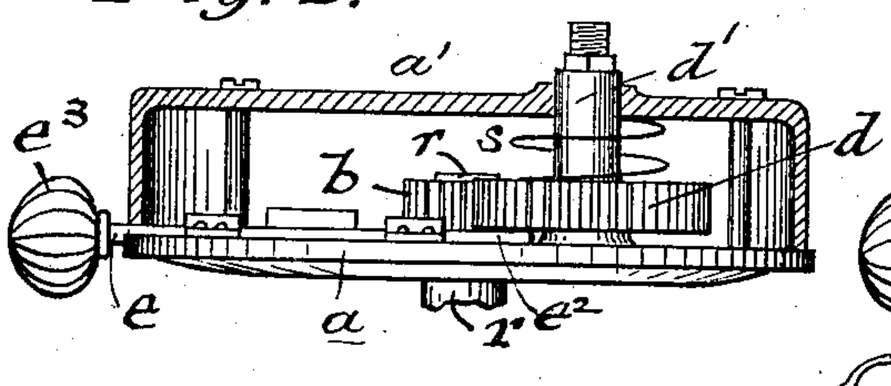



Fig. 3.

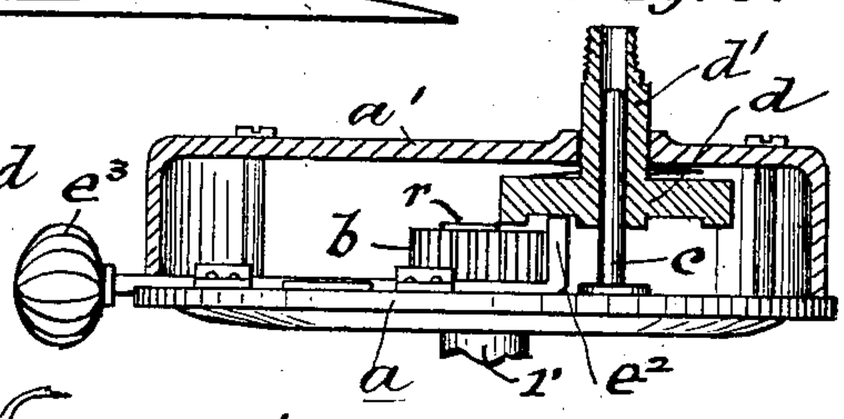
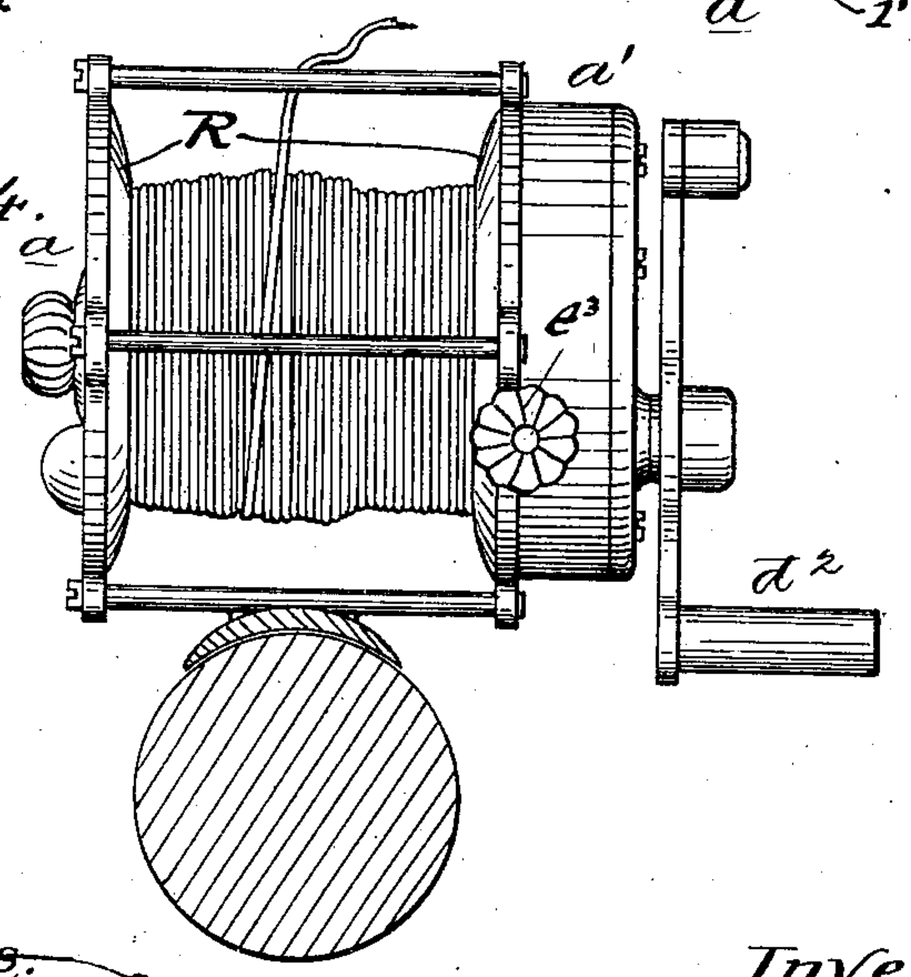



Fig. 4.

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No. 742,376. Patented October 27, 1903.

# UNITED STATES PATENT OFFICE.

ALBERT J. ARNOLD, OF NATIONAL CITY, CALIFORNIA.

## FISHING-REEL.

SPECIFICATION forming part of Letters Patent No. 742,376, dated October 27, 1903.

Application filed November 22, 1902. Serial No. 132,418. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT J. ARNOLD, a citizen of the United States, residing at National City, in the county of San Diego and State of California, have invented new and useful Improvements in Fishing-Reels, of which the following is a specification.

My invention relates to winding-reels, its object being to improve the same in respect to means for control of the winding power.

Taking as a class of winding-reels for the application and illustration of my invention a fishing-reel having a multiplying-gear, the invention consists in the provision and construction of means for throwing the multiplying-gear into and out of engaging relations with the reel at will.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is an end view of a fishing-reel with my improvement applied, the cover and manipulating-crank being removed for convenience of vision; Figs. 2 and 3, cross-sections showing the position of the parts in engagement and disengagement; Fig. 4, a side view of the reel complete.

Referring now to the drawings, *a* designates the reel-casing generally, and R the winding-reel, mounted and operating therein. The reel-shaft *r* extends at one side through the head or plate *a* of the casing and in multiplying-reels (and in most other reel constructions) is provided with a spur-pinion *b*. Adjacent to this, upon a fixed stud C, secured to the casing, is a multiplying-gear *d*, normally in mesh with the pinion *b*. The hub *d'* of the gear *d* is extended outward through the cover *a'* and receives the manipulating-crank $d^2$ or equivalent means for the application of power.

In my improvement the parts are so proportioned and arranged that the gear *d* may be moved outward upon its stud entirely out of mesh with the pinion *b*, as indicated in Fig. 3, and it will be seen that with these parts in such position the reel R is entirely free and disconnected from its driving mechanism.

The lateral movement of the gear *d* is effected by a bent shaft *e*, journaled partly in a groove of the head or plate *a*, held by caps *e' e'* and extending beneath the gear *d*, where its bent end $e^2$ (indicated most clearly by dotted lines in Fig. 1) rests beneath the gear normally flatwise with the plate *a* and out of contact. The other end of the shaft *e* projects beyond the plate *a* and is provided with a "bur" $e^3$ for convenience of manipulation.

Normally the gears *b* and *d* are in mesh, as indicated in Fig. 2, in which position power applied to the rotating crank $d^2$ will be communicated through said gears to the winding-reel R. If now it is desired to disengage the operating mechanism of the reel, the bur $e^3$ is rotated a quarter of a revolution until a flap or wing $e^2$ upon the shaft *e* (which normally stands outward) is brought flat upon the plate *a* as a limiting-stop. This movement brings the bent end $e^2$ of the shaft *e* from its normally flat position upon the plate *a* beneath the gear *d* to the upright position, (shown in Fig. 3,) pushing the gear *d* upward out of mesh with the pinion *r*, thus disconnecting the reel. This displacement of the gear *d* is against the compression force of a spiral spring *s*, interposed about the hub *d'*, between the upper face of the gear *d* and the inner side of the cover *a'*, which spring normally acts to hold the gear *d* in mesh. With the gears thus out of connection the reel is perfectly free to rotate independently of the driving mechanism, which remains quiescent until it is desired to reëngage the gears. The reëngagement is effected by turning the bur $e^3$ back to its former position, in which the bent end $e^2$ of the shaft *e* is again thrown down beneath the gear *d*, and the latter is again forced down by the spring *s* into its first position of engagement.

In the application of the improvement to a fishing-reel, as shown, the disengagement of the reel may be effected instantaneously while manipulating the hand-crank—that is to say, the hand-crank may be used as the means of drawing the gear *d* directly outward instantly and as instantly released and allowed to automatically reëngage by the force of the spring *s* without touching the bur $e^3$. In trout or bass fishing this gives the angler a most important advantage, as will be well understood by those proficient in the art.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In combination with a winding-reel hav-

ing a pinion upon its axial shaft, an adjustable engaging gear, provided with a spring, whereby the same is held normally in engaging relations with the said pinion, and means including a rotatable shaft having a flap or wing for moving the gear in an axial direction out of engagement with said pinion against the force of the spring, substantially as set forth.

2. In a winding-reel of the character indicated, the combination of the reel-pinion, the driving-gear, the controlling-spring, and the horizontally-journaled rotatable bent shaft actuating the driving-gear as described against the normal force of the spring, substantially as set forth.

3. In a winding-reel of the character indicated, the combination of the reel-pinion, the driving-gear, provided with the extended hub, the hand-crank, attached to said hub, the spring upon the hub interposed between the upper face of the driving-gear and a fixed element of the casing, and the horizontally-journaled rotatable bent shaft actuating the driving-gear as described, against the normal force of the spring, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT J. ARNOLD.

Witnesses:
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