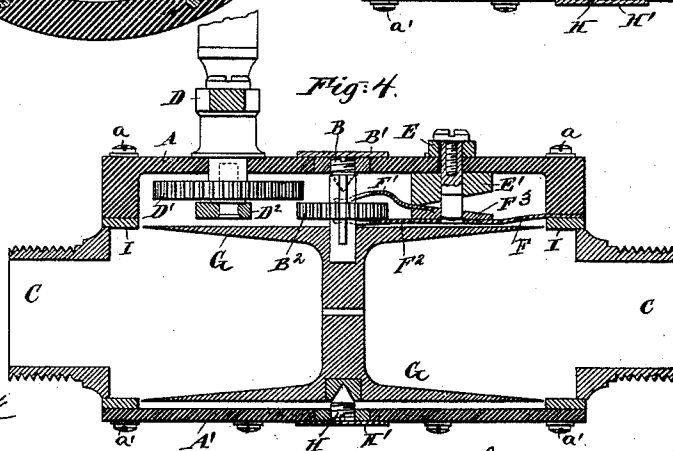
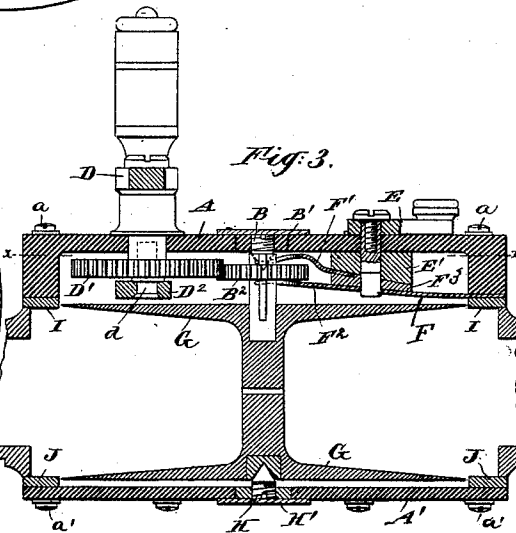
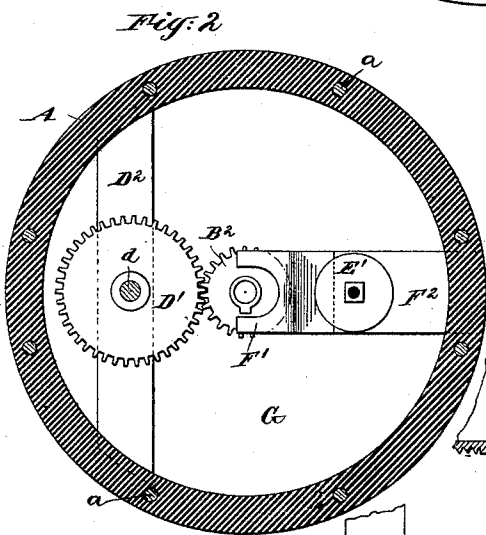
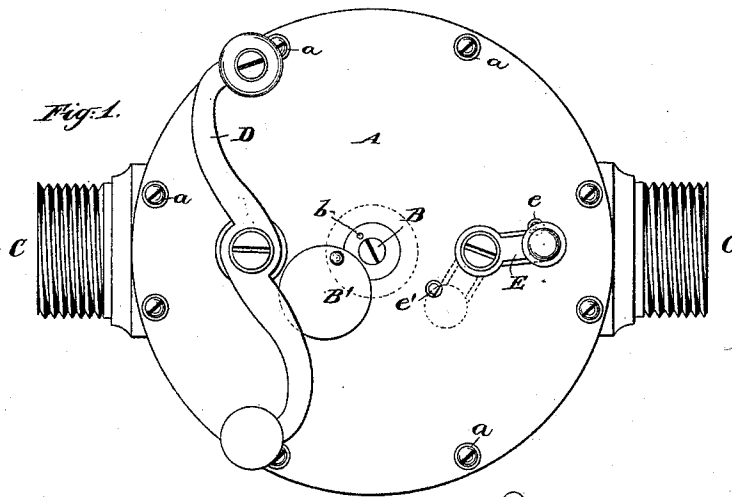


(No Model.)

J. KNUDSEN.
FISH LINE REEL.

No. 465,579.

Patented Dec. 22, 1891.



Witnesses:

H. P. K. Pack

Michael J. Murray

Inventor:

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UNITED STATES PATENT OFFICE.

JASPER KNUDSEN, OF NEW YORK, N. Y.

FISH-LINE REEL.

SPECIFICATION forming part of Letters Patent No. 465,579, dated December 22, 1891.

Application filed June 29, 1891. Serial No. 397,795. (No model.)

To all whom it may concern:

Be it known that I, JASPER KNUDSEN, a citizen of the United States, residing at New York city, in the county and State of New York, have invented a new and useful Improvement in Reels for Fish-Lines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention comprises certain combinations of mechanism, and relates to the gear-shifting devices which serve to connect and to disconnect the gear-wheels employed for winding a fish-line around the reel-spool; also to the construction of the spool-casing and the arrangement of the gearing and its shifting mechanism, so as to occupy a narrow chamber of the reel, as hereinafter set forth. Figure 1 of the drawings represents a plan view of the reel with its outer attachments. Fig. 2 represents a sectional view taken at line *xx* of Fig. 3, showing the interior of the chamber in which the gearing and gear-shifting mechanism are inclosed by the removable cap or cover A. Fig. 3 represents a central transverse section of the reel, showing the gear-wheels in mesh with each other and the connection of the gear-shifting devices therewith. Fig. 4 is a similar section showing the gear-wheels out of mesh and exhibiting the gear-shifting mechanism in a correspondingly different relation thereto.

The object of my invention is to furnish certain improvements in the construction of reels for fish-lines, which improvements are set forth in this specification, and defined in the claims.

In the drawings, C C denote the screw-threaded couplings for attaching a fishing-rod centrally to the reel.

D denotes the crank-arm and its handle for winding the spool, having its axle journaled in the cap or cover A, and it is provided with the cogged wheel D'.

D² denotes a cross-bar, in which the inner end *d* of the axle of the crank-arm is boxed or seated.

B' denotes a slide, which serves to cover the oiling-orifice *b* and screw B.

E denotes the short crank for shifting the pinion B², as hereinafter described. The jour-

nal of crank E is provided with the cam E', which turns with it.

The letters *a* indicate the screws which secure the cover A over the narrow chamber containing the gearing and shifting mechanism.

a' denotes the screws which secure the cover on the opposite side of the reel.

e e' denote studs which serve to limit the adjusting movement of crank E.

The shifting pinion B² is mounted on the journal of the spool G and is adjustable thereon, being provided with an inside groove that works on the spline secured to said journal. The spool G has cone-shaped axle boxes or bearings, into which the cone-shaped pivotal ends of screws H B fit and on which the spool revolves and runs freely without friction.

The cam E' has an inclined or beveled face and is fixed on the journal attached to the gear-shifting crank E. The shifting pinion B² is embraced between the two branches F' F² of the flat steel spring F, secured at I to the reel, as shown in Figs. 3 and 4. These branches of spring F are connected with a circular block having a beveled upper surface corresponding with the beveled lower surface of the circular cam E', and the opening through said block and spring is large enough to allow them to be adjusted without impinging upon the journal of the crank E, and to permit freedom of movement of the shifting pinion B² the ends of the branches F' F² of spring F are cut away, as seen in Fig. 2. The pinion B², which slides freely longitudinally on the spool-journal, (when being adjusted,) is also free to move within certain limits between the branches F' F², which embrace it, and when the spring F and its branches occupy the relative position, as shown in Fig. 3, pinion B² will be in mesh with gear-wheel D' and crank-arm E will occupy the position against stop *e*, as shown in Fig. 1; but when it is required to disconnect the spool from the winding-gearing the crank-arm E will be turned to the position shown in dotted lines in Fig. 1 and in contact with stop *e'*, and this adjustment will cause a partial revolution of cam E', which will act against spring-block F³ and depress spring F and its branches F' F², which will move pinion B² out of mesh with gear-wheel D', as shown in Fig. 4. The

reverse movement of crank E will release the spring from the action of the cam and allow it by its retracting power to throw pinion B² into mesh with wheel D'. When pinion B² is
5 out of gear with wheel D', the spool will be free to revolve rapidly as the line is thrown out by a person in the usual way, and as the spool is supported only by the cone pivots the line may be thrown to a greater distance than
10 from the reels of different construction.

Having described my invention, I claim and desire to secure by Letters Patent—

1. In a fishing-reel, gear-shifting mechanism consisting of bifurcated strut-springs secured to the frame and embracing the reel-stud and its loose gear, and a crank-pin having
15 a beveled block thereon for engaging a beveled block on the strut-springs.

2. A fishing-reel having a suitable gear-casing, a reel-stud journaled in said casing, 20 a gear-wheel loosely splined on said stud for engaging the crank-gearing, bifurcated strut-springs having one end secured to the casing or frame, the opposite ends embracing the reel-stud and engaging the loose pinion there- 25 on, and a crank-pin having a beveled block thereon and engaging a similar block on the strut-spring.

In testimony that I claim the invention above set forth I have affixed my signature in 30 presence of two witnesses.

JASPER KNUDSEN.

Witnesses:

MICHAEL J. MURRAY,
H. P. K. PECK.