

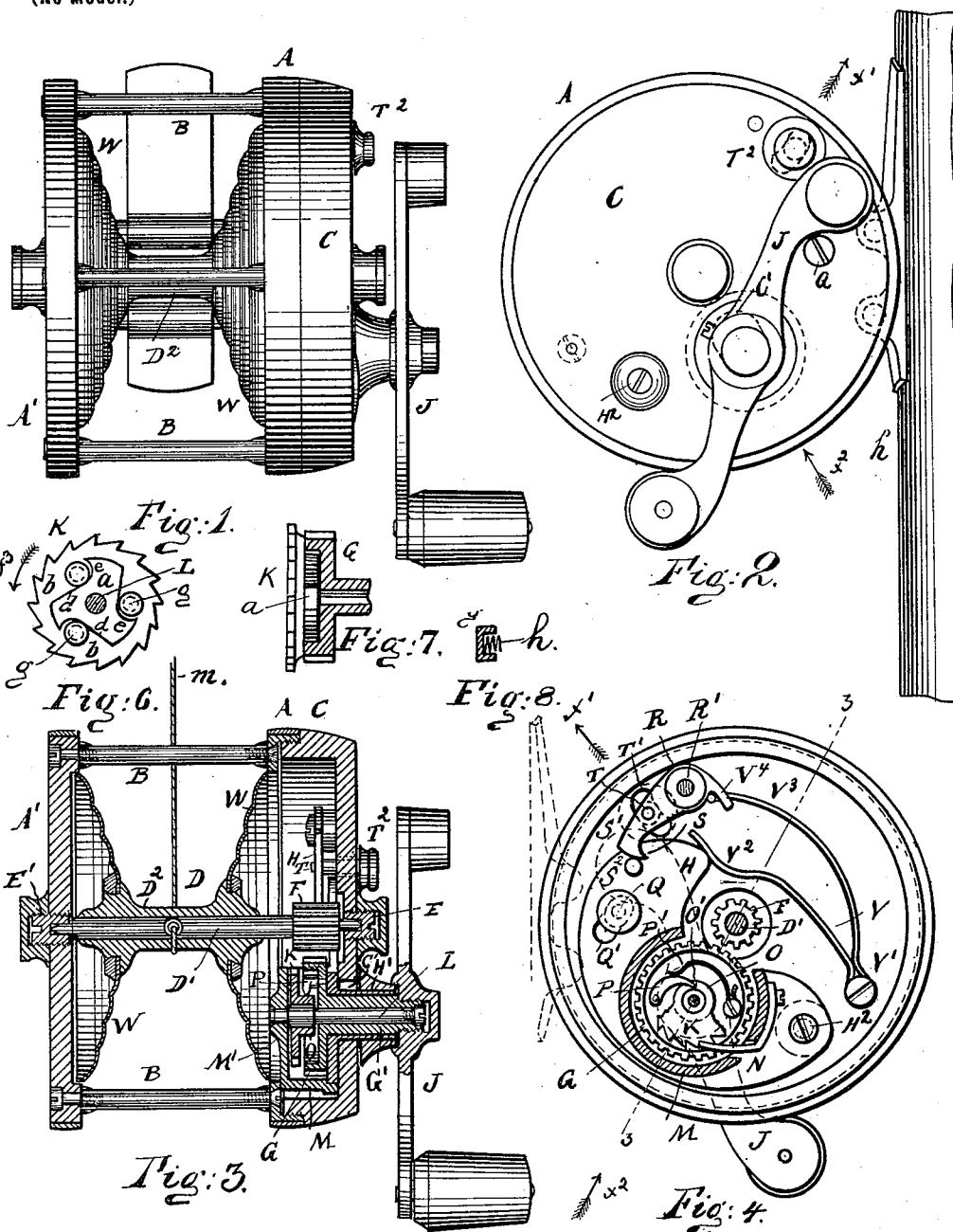
No. 659,477.

Patented Oct. 9, 1900.

E. HOLZMANN.
FISHING REEL.

(Application filed Apr. 9, 1900.)

(No Model.)



WITNESSES:

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FISHING-REEL.

SPECIFICATION forming part of Letters Patent No. 659,477, dated October 9, 1900.

Application filed April 9, 1900 Serial No. 12,118. (No model.)

To all whom it may concern:

Be it known that I, ERNEST HOLZMANN, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fishing-Reels, of which the following is a specification.

One object of my invention is to provide a new and improved fishing-reel which is simple in construction, can readily be adjusted to throw the spool in and out of gear with the winding-gear, and is provided with an automatic drag which is set automatically at all times when the line is pulled out by a fish.

A further object of my invention is to provide a reel-spool which is strong, light, and durable.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate like parts in all the views, Figure 1 is a front view of my improved reel. Fig. 2 is a side view of the same and of part of the pole. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 4. Fig. 4 is a side view of the reel, the cover-plate being removed. Fig. 5 is a detail view of part of the hub. Figs. 6, 7, and 8 are details of a modified construction.

The reel-frame is constructed with the two circular side frames A and A', united by posts B, and the cover-plate C is screwed into the frame A. The arbor D', on which the spool D is secured, is provided with pointed ends, which are mounted in the adjustable bearings E and E', screwed into the cover-plate C and side frame A', respectively. Within the cover-plate C a pinion F is mounted on the arbor D' to turn with the same, and this pinion can be engaged by the cog-wheel G, formed on the inner end of a tubular shaft G', mounted to rotate axially in the neck H', projecting from a plate H, pivoted at H² to the inner surface of the cover-plate C, which neck passes through a slot C' in the cover-plate C. A balanced handle J of the conventional type is screwed on the outer end of the tubular shaft G'. The exposed face of the cog-wheel G is hollowed out, and in the same a ratchet-wheel K is mounted to turn on a shaft L, projecting from the cover-plate M' of a cap M, made integral with the piv-

oted plate H, into the tubular shaft G'. The ratchet-wheel K is engaged by a spring-pawl N, attached to the outside of the cap M and extending through a hole in the same. The ratchet-wheel K is provided with a hub O, having a recess or hole O', in which a pawl P can engage, that is pivoted to the recessed side of the cog-wheel G and is pressed by a spring P', attached to the same side of the wheel, against the periphery of the hub O. A guide-pin Q, secured on the cover-plate C, passes through a slot Q' in the pivoted plate H. A cam-lever R is pivoted at R' to the inner side of the cover-plate C and is provided with an arm S', terminating in a hook S, that can engage a pin S² on the swinging end of the pivoted plate H. A pin T projects from the arm S' through a slot T in the cover-plate C and has a head T² on its outer end. A substantially V-shaped spring V, attached to the inner face of the cover-plate C at V', has one arm V² resting against the swinging end of the pivoted plate H and the other arm V³ against a projection V⁴ of the cam-lever S.

The spool D has two annularly-corrugated flaring or dished circular side pieces W, which are secured on the hub. The hub is provided at each end with an annular shoulder W', against which the central part *a* of a side piece W rests, and on said part *a* an annular washer *d* is placed, which has the edge of its central opening beveled, as at *e*. An annular bead *f*, formed on the hub, is then forced down into the recess between the hub and said inner beveled edge of the washer *d* and finished off, as shown in dotted lines in Fig. 5. Thereby the end piece W is held firmly and securely on the hub. As the end pieces W are corrugated, they can be made very light without impairing their strength.

h represents the pole. The line *m* is attached in any suitable manner to the hub.

In place of using the pawl P and the hole O' in the hub O of the ratchet-wheel an automatic clutch may be used, as shown in Figs. 6, 7, and 8. In this construction the ratchet-wheel K is provided on its inner surface with a flat projection *a*, having one or more recesses *b*, having an inclined bottom *d* and a curved end *e*, and in each recess a friction-roller *g* is placed. These rollers are made cup-shaped, with the open end toward the

ratchet-wheel, and each cup-shaped roller contains a helical spring h , which bears against the ratchet-wheel and presses the closed end of the cup-shaped roller against the face of the wheel G to insure the carrying along of said rollers by the wheel G when the latter is rotated. When the wheel G is rotated in the direction of the arrow x^3 , the rollers g are pressed against the inner surface of the wheel G and on the inclined bottom d of the recesses b , and thus turn the ratchet-wheel K ; but the latter is not rotated when the wheel G is turned in the inverse direction of the arrows x^3 .

15 The operation is as follows: With the parts in the position shown in Fig. 4 the spool is disengaged from the winding-gear and is free to turn when the line unwinds, as in casting. To bring the pinion F on the spool-arbor D' into engagement with the cog-wheel G , the neck H' is pressed by means of the fingers in the direction of the arrow x^2 , whereby the plate H is swung on its pivot at H^2 against the tension of the spring-shank V^2 . Thereby the pin S^2 is pushed under the hook S , which it engages and locks the plate H in position to keep the pinion F in engagement with the wheel G . By turning the handle J the spool can now be turned to wind the line on the spool, the cog-wheel G turning from right to left, so that the pawl P slides over the hub O of the ratchet-wheel without turning the latter. As soon as the handle J is released to permit the fish to pull out the line the wheel G is turned from left to right, Fig. 4, and as soon as the pawl P arrives at the hole O' in the hub O its end snaps into the said hole and the ratchet-wheel P is turned with the wheel G and the teeth of the ratchet-wheel are drawn under the click-spring N , which thus acts as a drag and prevents the line from unwinding too rapidly from the reel and also offers considerable resistance to the fish. This drag is always set and always acts when the fish pulls on the line. To adjust the reel for casting, the button T^2 is pushed in the direction of the arrow x' , whereby the hook S of the lever R is disengaged from the pin S^2 , permitting the spring-shank V^2 to throw the plate H into the position shown in Fig. 4. Thereby the pinion H is disengaged from the cog-wheel G . If desired, a friction-wheel may be used in place of the ratchet-wheel K and the spring N mounted to bear on the said friction-wheel.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fishing-reel, the combination with a

frame and spool, of a pinion on the spool-arbor, a pivoted plate in the frame, a winding cog-wheel on said plate, a cam-lever for shifting said plate to disengage the pinion from said winding cog-wheel, a hook on said cam-lever and a pin on said plate for engagement with said hook, substantially as herein shown and described.

2. In a fishing-reel, the combination with a frame, of a removable cover-plate, a spool, a pinion on the arbor of the spool, a plate pivoted to the inner side of said removable cover-plate, a cog-wheel mounted on said plate and having a tubular shaft extending through a slot in the cover-plate, a handle on the outer end of said tubular shaft, a cam-lever pivoted to the inner side of the cover-plate to act on the pivoted plate, and a pin projecting from said cam through a slot in the cover-plate, substantially as herein shown and described.

3. In a fishing-reel, the combination with a frame and spool, of a winding cog-wheel for rotating the spool, a ratchet-wheel mounted loosely in relation to the cog-wheel, a click-spring engaging the ratchet-wheel and a clutch mechanism for engaging the winding cog-wheel with the ratchet-wheel, when the cog-wheel turns in one direction, substantially as herein shown and described.

4. In a fishing-reel, the combination with a frame and spool, of a winding cog-wheel for rotating the spool, a ratchet-wheel mounted loosely in relation to the cog-wheel, a click-spring engaging the ratchet-wheel, recesses in the ratchet-wheel, cup-shaped friction-rollers in said recesses and a spring in each friction-roll, one end of the spring resting on the side of the ratchet-wheel, substantially as herein shown and described.

5. In a fishing-reel the combination with a frame and spool, of a cover-plate on one end of the frame, a pinion on the spool-arbor, a cog-wheel engaging said pinion, a tubular shaft on the inner end of which said cog-wheel is fixed, a neck in which said tubular shaft is mounted to turn, a plate from which said neck projects, which plate is pivoted to the inner surface of the above-mentioned cover-plate and the said neck and the tubular shaft therein passing through a slot in the cover-plate, substantially as herein set forth.

Signed at New York, in the county of New York and State of New York, this 16th day of December, A. D. 1899.

ERNEST HOLZMANN.

Witnesses:

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