

(No Model.)

W. SHAKESPEARE, Jr.
FISH LINE REEL.

No. 591,086.

Patented Oct. 5, 1897.

Fig. 1.

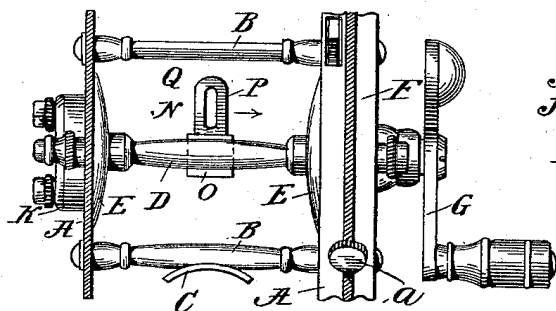


Fig. 2.

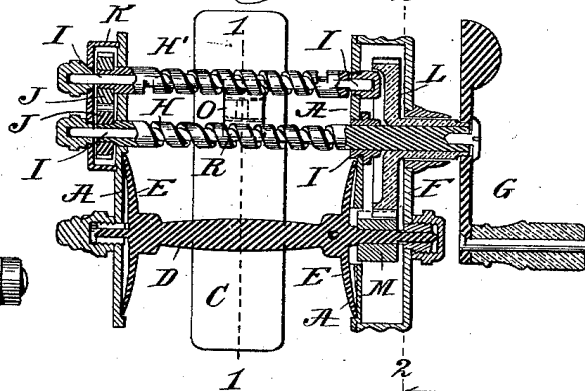


Fig. 3.

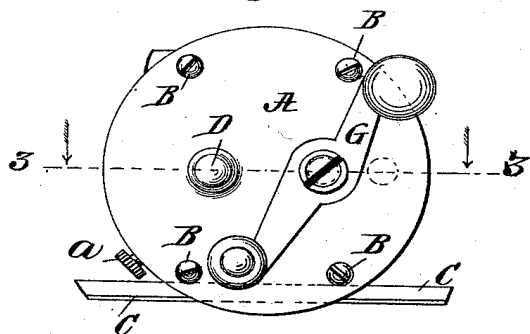


Fig. 4.

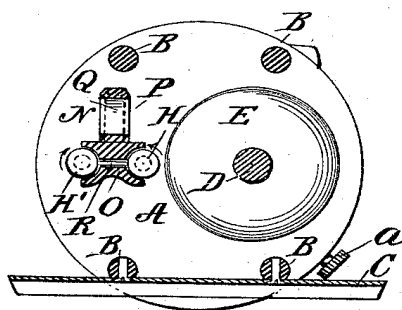


Fig. 6.

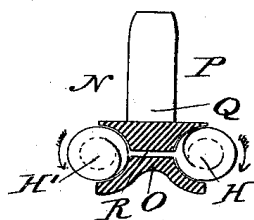


Fig. 7.

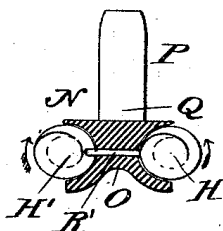
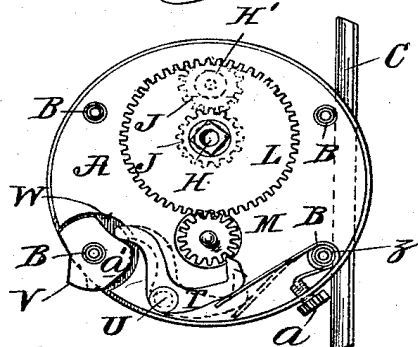


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM SHAKESPEARE, JR., OF KALAMAZOO, MICHIGAN.

FISH-LINE REEL.

SPECIFICATION forming part of Letters Patent No. 591,086, dated October 5, 1897.

Application filed May 13, 1897. Serial No. 636,297. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SHAKESPEARE, Jr., a citizen of the United States, and a resident of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a certain new and useful Fish-Line Reel, of which the following is a specification.

The invention relates to improvements in that class of fish-line reels in which means are provided for winding the line in regular even layers, similar to those found on spools of thread, and to those which are provided with means for retarding the free action of the reel by means of a drag or click.

In the drawings, Figure 1 illustrates an elevation of the invention. Fig. 2 illustrates a plan view in section on the line 3 3 of Fig. 3, looking in the direction of the arrows, the crank being in a slightly-different position. Fig. 3 illustrates an end view looking toward the left in Figs. 1 and 2. Fig. 4 illustrates a vertical section on the line 1 1 of Fig. 2. Fig. 5 illustrates a vertical sectional view on the line 2 2 of Fig. 2. Fig. 6 illustrates a detail of the reciprocating line-guide. Fig. 7 illustrates another detail of the reciprocating line-guide, showing the operation of the parts in the act of reciprocation.

A A are the side plates of the reel.

B B are the cross-bars.

C is the base-plate, whereby it is attached to the rod.

D is the reel.

E E are the reel-flanges.

F is the usual casing for the gearing.

G is the crank.

H H' are two transverse grooved spindles journaled in the side plates, as at I I, (see Fig. 2,) and J J are intermeshing gears on these grooved spindles, inclosed within a little boxing K, attached to the left-hand side plate.

The crank G is attached to the end of the spindle H, which passes through the casing F and projects laterally beyond it for the reception of the crank.

L is a large pinion fast on the spindle H and which meshes into a small pinion M on the shaft of the reel.

N is the thread-guide. It comprises a horizontal member O and a vertical member P. They form a single structure.

Q is an oblong slot made vertically in the member P, through which the line passes, and it will be particularly noticed that this slot has much greater length than width. This I have found a most valuable feature because it frequently happens when the hole in the line-guide is round, as in all other forms of this device known to me, that the line will snarl and become jammed at this point, particularly in salt-water fishing, whereas by the employment of the oblong slot the line automatically adjusts itself in the event of tendency to snarl and moves longitudinally of the slot in one direction or the other until relieved, and thus snarling is in the majority of cases avoided. The lower member O of this guide has a hole R made through it, in which loosely fits a hardened steel or other suitable pin R', the ends of which are of such size as to fit and smoothly travel through the grooves in the spindles H and H', respectively, and the ends of the pin are rounded or beveled off, so that when one of its ends is in engagement with the groove in one of the spindles the pin will be prevented from longitudinal movement by its beveled or rounded end coming in contact with the screw or sides of the groove in the opposite spindle until the proper time for the transfer arrives. These grooves are well made and finished, and at each end they vanish, by a gradual incline in a manner now well known, into the surface of the spindles, as seen at S S, Figs. 6 and 7, and the construction and arrangement of the parts are such that substantially the full depth of the groove on one of the spindles is opposite the vanishing part of the groove in the opposite one, the relative formation of the parts being reversed at different ends of the spindles; and the pin R' is of such length that, when the guide is in position upon the spindles, as shown, it will be flush with the surface of the concave seat for the spindle on one side and project beyond the concave seat on the opposite side to about the extent of the depth of the groove in the spindle on that side, so that it will properly engage with the said groove and propel the guide right or left, as the case may be, when the spindles are rotated by the turning of the crank or the running out of the line.

T (see Fig. 5) is a click and tension device. It is pivoted to the side of one of the end plates A, as at U, and engages at one end with the teeth or cogs of the pinion M and at the other with an oscillatory dog V, pivoted to the same side plate and preferably located partly in a recess W made therein. The tension of the click may be adjusted by a spring Y, mounted on a pin or stud Z, and provided with a tension-adjusting thumb-screw a, as shown.

The operation of the device has been largely described in the foregoing, and no further explanation is required except to state that the line as it proceeds from the reel passes through the slot Q in the guide, and that whether it is uncoiled by the running out of the line or coiled up by turning the crank the guide always controls and directs it relative to the reel paying off therefrom at right angles to the reel and laying it thereon also at right angles and in even smooth windings without crossing the coils and free from danger of snarling.

Among the advantages possessed by my reel over all others known to me is the fact that under my construction of the grooved spindles the grooves do not cross each other, as must necessarily be the case where a single spindle only is used, and this construction inevitably limits the life of the reel and tends to imperfect action, especially when there is lateral strain on the line—as, for instance, the pulling of a heavy fish, exactly the time when absolutely perfect action is essential or the line may part. Also the tension of the click device may be easily and quickly adjusted to the necessity of each occasion by simply turning the adjusting-screw a, and when not required it may be entirely disengaged by rocking the dog V, so that the end of the click which engages with it will ride up on the surface a' of the dog and be disengaged from the teeth of the pinion M.

It will be apparent to those who are familiar with this art that many modifications may be made in the construction of the details of the apparatus without departing from the essentials thereof. I therefore do not limit myself to such details.

I claim—

1. In a fish-line reel, the combination of a supporting-frame, a winding-cylinder, two grooved spindles geared together, a guide-block for the line supported upon and reciprocated by the grooved spindles, and a crank to actuate the several devices, for the purposes set forth.

2. In a fish-line reel the combination of a supporting-frame, a winding-cylinder, two grooved spindles geared together, a crank upon one of the spindles to which a large gear is attached, a small gear on the axis of the winding-cylinder, a guide for the line which is supported upon and reciprocated by the grooved spindles and a crank to actuate the several devices for the purposes set forth.

3. In a fish-line reel, the combination of a supporting-frame, a winding-cylinder, two grooved spindles geared together, a large gear upon one of the spindles which meshes into a small gear upon the shaft of the winding-cylinder, a crank upon the spindle which has the large gear, and a guide for the line reciprocated by the grooved spindles, for the purposes set forth.

4. In a fish-line reel, the combination of two spindles adapted to be rotated in different directions and both of them grooved in the same direction, the grooves near the ends of the spindles gradually “vanishing,” and a guide for the line supported upon the spindles and provided with a transversely-movable pin adapted to enter and operate in the grooves on the spindles, for the purposes set forth.

5. In a fish-line reel, a guide for the line comprising a portion having a hole therein, through which the line may pass, a pin transversely movable through said portion and adapted to engage with grooves in the actuating-spindles, said grooved spindles themselves, and means to rotate the same, for the purposes set forth.

6. In a fish-line reel, guiding mechanism for the line, comprising two parallel grooved and rotatable spindles, the grooves in which gradually “vanish” at or near the respective ends of the spindles, a guide-block for the line supported upon the said spindles and provided with means to engage with the grooves in them, for the purposes set forth.

7. In a fish-line reel actuating mechanism for the line comprising two parallel grooved and rotatable spindles, a guide-block for the line supported upon the said spindles, and provided with a movable pin adapted to engage with the grooves in the spindles, and by them automatically shifted from one side to the other, for the purposes set forth.

8. In a fish-line reel guiding mechanism for the line, comprising two parallel, grooved and rotatable spindles, the grooves in which gradually vanish at their ends, the vanishing part of the grooves in one spindle being opposite the part of the groove in the opposite spindle which has full depth, a guide-block for the line adapted to be reciprocated upon the spindles, and provided with a movable, transverse pin which engages with the grooves on the spindles, for the purposes set forth.

9. In a fish-line reel, the combination of a guide-block for the line, two transverse, rotatable spindles, means upon the guide-block, which engages with means on the spindles for actuating the guide-block, and means for rotating the spindles, the construction and arrangement being such that one of the spindles moves the block in one direction, and the other in the opposite direction, for the purposes set forth.

10. In a fish-line reel, the combination of a supporting-frame, a winding-cylinder, two grooved spindles geared together at one end,

a crank upon one of the spindles, a large gear-wheel upon the same spindle as the crank, which meshes into a smaller gear on the shaft of the winding-cylinder, a guide-
5 block for the line, supported upon the two grooved spindles, and having a transversely-movable pin which engages successively with the grooves in the said spindles, and means upon the spindles to shift the pin upon the

completion of the travel of the block in one or direction, for the purposes set forth.

Signed at Kalamazoo, in the county of Kalamazoo and State of Michigan, this 10th day of May, A. D. 1897.

WILLIAM SHAKESPEARE, JR.

Witnesses:

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WALLACE F. W. STAFFORD.