Feb. 5, 1924. 1,482,469

J. C. JESPERSEN

AUTOMATIC TROLLING WINCH

Filed Feb. 3, 1923 2 Sheets-Sheet 1

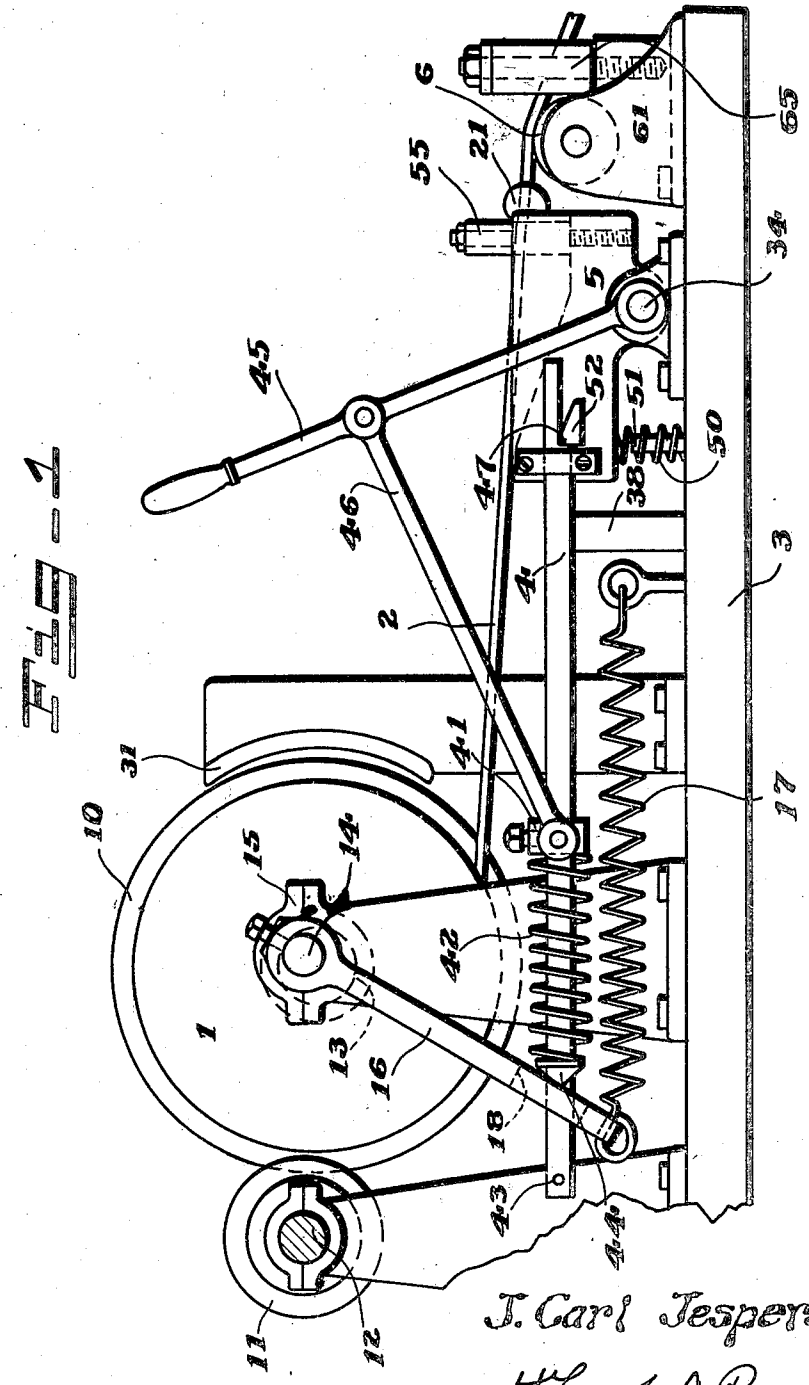

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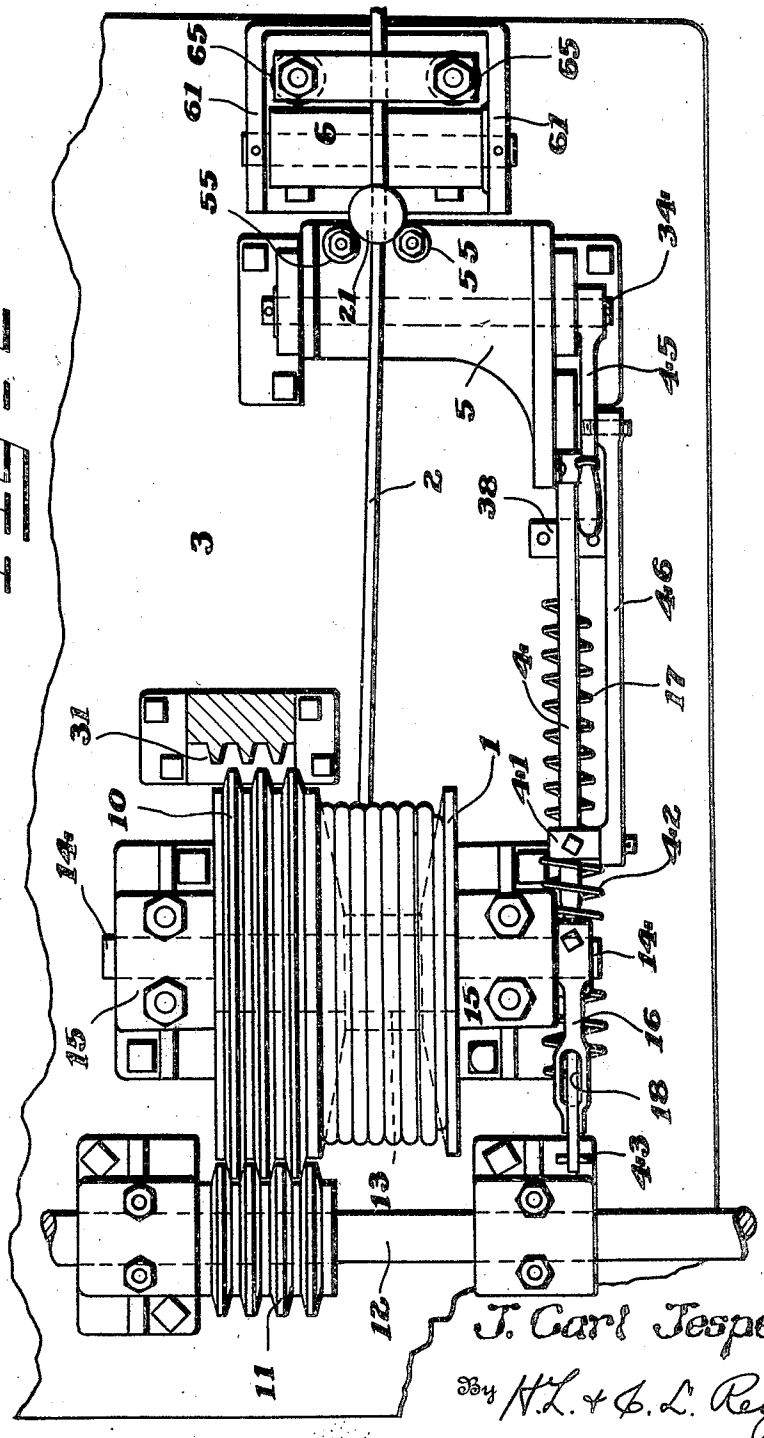
Fig. 2



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UNITED STATES PATENT OFFICE.

JASPER CARL JESPERSEN, OF FREELAND, WASHINGTON.

AUTOMATIC TROLLING WINCH.

Application filed February 3, 1923. Serial No. 616,723.

To all whom it may concern:

Be it known that I, JASPER CARL JESPERSEN, a citizen of the United States of America, and resident of the town of Freeland, in the county of Island and State of Washington, have invented certain new and useful Improvements in Automatic Trolling Winches, of which the following is a specification.

My invention relates to winches especially intended for use by fishermen operating small boats in trolling for salmon or other fish.

It is an object of my invention to provide a winch which may be hauled in by power, which may be quickly connected to the source of power to drive it, but which will automatically disengage itself from the power source after the proper amount of line has been hauled in.

It is another object of my invention to provide a simple, compact, and convenient winch of the character described.

It is a further object to provide such a winch in which the weight of the line itself cannot accidentally trip or disengage the winch.

It is a further object to provide a winch by means of which the application of power may be gradual, although the control handle may be thrown over rapidly.

Other objects, particularly those relative to structural details, may be ascertained from a study of the accompanying drawings and of the following specification and claims.

My invention comprises those novel parts and combinations thereof which are shown in the accompanying drawings, described in the specification and particularly defined by the claims terminating the same.

In the accompanying drawings I have shown my invention in the form which is now preferred by me.

Figure 1 is a side elevation of my winch.

Figure 2 is a plan view thereof, a part being shown in section.

It is, of course, necessary to provide a drum, as 1, upon which the line 2 is received. The drum is driven in any suitable manner, and for this purpose I have shown a grooved friction roller 10 formed as a part of the drum 1, which is designed to engage a complemental grooved friction driving wheel 11 which is secured upon a driving shaft 12. The drum 1 is rotatable about a shaft 13, which shaft in effect is the offset central portion of a crank shaft, the outer ends 14 of which are alined and journaled in fixed bearings 15. A lever 16, secured upon an end 14 of the crank shaft, serves to oscillate this crank shaft, and thereby to move the drum 13 bodily. By such movement of the drum 13 and the friction roller 10, it is possible to engage the latter with the driving wheel 11 or to disengage it therefrom. In effect the drum 1 and roller 10 are carried upon the short arm of a lever formed by the offset of the axis of the portion 13 from that of the ends 14, the pivot of which corresponds to the axis of the shaft ends 14, and the long arm of which is formed by the lever 16. Obviously the equivalent construction would be to similarly oscillate the driving shaft 12, but I prefer to construct the winch as has been described.

In order to maintain the driving wheel 11 and the roller 10 normally out of engagement, except when retained in engagement by means to be described hereinafter, I secure a spring 17 to the lever 16 and fix its other end in the base 3. This spring may also be employed to throw the roller 10 over into engagement with a fixed brake 31. When so engaged the drum 1 is held against rotation. It will be noticed that the movement of the drum in a direction to engage its roller 10 with the driving wheel 11 is against the direction of extension of the line 2, but that its movement out of engagement with the driving wheel 11 and into engagement with the brake 31 is in the direction of the extension of the line 2. Hence the action of the spring 17 is assisted by the pull upon the line 2.

In order to engage the roller 10 and the driving wheel 11 I provide a thrust bar 4 having a thrust collar 41 secured thereon, and having a spring 42 interposed between the collar 41 and the lever 16. The thrust bar 4 is slidable relative to the lever 16 and as shown herein extends through a slot 18 therein. A pin 43 prevents disengagement of the thrust bar 4 and lever 16. A washer 44 may be interposed directly between the spring 42 and lever 16 if desired, this being pointed to provide a fulcrum engageable with the lever 16. A manual control handle 45 is connected by a link 46 to the thrust collar 41, the control handle being pivoted at 34 upon the base 3.

I provide means which are engageable upon movement, through the medium of the

thrust bar 4, of the drum 1 into engagement with the driving means, whereby the drum is maintained in this position, but which means are disengageable upon the hauling in of a predetermined amount of line. A tiltable platform 5 is pivoted upon the base 3, as at 34, being maintained in position by a spring 50. A stop pin 51 may be provided for limiting the tilting of the platform 5 in the tripping direction. A catch 52 is provided upon the platform 5, this being engageable by a complemental catch 47 upon the thrust bar 4 when the thrust bar has been moved in a direction to engage the roller 10 and driving wheel 11. Such engagement of the catches 47 and 52 prevents a return movement of the drum to disengage its roller 10 from the driving wheel 11.

Upon the platform 5 I provide a pair of vertical guides, these being shown as in the form of rollers 55 having vertical axes. These are spaced laterally by a small amount, the space being sufficient to permit free passage of the line 2 therebetween. A ball 21 is secured upon the line 2, this ball being of sufficient extent that it will not pass between the guide rollers 55. The ball 21 is fixed at such a point in the line that when it engages the rollers 55, the hook may be easily drawn aboard the vessel by hand. When it engages the rollers 55 the platform 5 is tilted in such manner as to disengage the catches 47 and 52. A stop 38 is provided for limiting the downward movement of the end of the thrust bar 4 which carries the catch 47, thus permitting the catch 52 to continue on downward beyond the limiting position of the catch 47.

In order to prevent the possibility that the weight of the line 2, when reeled out, will tilt the platform 5, I have provided a horizontal roller 6 which supports the weight of the line, this being positioned adjacent the guide rollers 55 but mounted upon bearings 61 which are supported directly from the base 3. I have shown also vertically extending fixed guide rollers 65, these being provided for use if desired and being spaced sufficiently that the ball 21 will readily pass between them.

When it is desired to haul in the line 2, the handle 45 is thrown to the left, as shown in the drawing, and through the medium of the spring 42 the lever 16 is moved to the left and the friction roller 10 is engaged with the driving wheel 11, which is continuously rotating. The drum 1 then begins to rotate in a direction to haul in the line 2. At the same time the catches 47 and 52 are engaged, and disengagement of the friction roller 10 and driving wheel 11 is prevented. As soon as the ball 21 reaches the rollers 55 the platform 5 is tilted, and as the catch 47 upon the thrust bar is prevented from dropping by means of the stop 38, the catches 47 and 52 are now disengaged. The spring 17 thereupon throws the lever 16 to the right, disengaging the roller 10 from the driving wheel 11 and engaging it with the brake 31, if the latter is employed. This immediately stops the rotation of the drum 1 and holds it against reverse rotation. Thereafter at leisure the fish may be removed from the hook and the line reeled out in some suitable manner.

Such a device is compact and simple, and is a great convenience to a fisherman who must tend many lines at once. If two lines require his attention at once, he may begin hauling in both at the same time, being certain that they will stop at the proper time. In order to save space, these units will ordinarily be duplicated upon a single base, this of course being a matter of choice. Obviously, many variations in the details may be made, without changing the essentials of my invention. Those features which constitute my invention are set forth in the appended claims.

What I claim as my invention is:

1. A trolling winch comprising a drum upon which the line is received, means for rotating said drum and for stopping such rotation, a lever shiftable to control the application of said means, a ball fixed upon said line, a tiltable platform, means upon said platform permitting passage of the line, but engageable by the ball to tilt the platfrom, a trip bar engageable with said lever, and catches upon said trip bar and platform engageable to maintain said lever in position to cause rotation of the drum.

2. A trolling winch comprising a drum upon which the line is received, means operable by shifting said drum to start or to stop the rotation thereof, a drum shifting lever, a tiltable platform, a ball fixed upon said line, means upon said platform permitting passage of the line, but engageable by the ball to tilt the platform, a trip bar engageable with said shifting lever and catches upon said trip bar and platform engageable to maintain the drum, through the trip bar and shifting lever, in operating position.

3. A trolling winch comprising a drum upon which the line is received, means for rotating said drum and for stopping such rotation, other means for controlling the application of said first means, a ball fixed upon said line, a tiltable platform, a pair of vertical guides upon said platform and laterally spaced insufficiently to permit passage between them of said ball, a catch upon said platform and a complemental catch associated with said second means, said catches being operable while engaged to maintain the drum and its rotating means in operative engagement.

4. A trolling winch comprising a drum upon which the line is received, means for rotating said drum and for stopping such rotation, other means for controlling the application of said first means, a ball fixed upon said line, a tiltable platform, a pair of vertical guides upon said platform and laterally spaced insufficiently to permit passage between them of said ball, a horizontal roller fixed adjacent said vertical guides, the line passing thereover and between said guides, a catch upon said platform and a complemental catch associated with said second means, said catches being operable while engaged to maintain the drum and its rotating means in operative engagement.

5. A trolling winch comprising a drum upon which the line is received, a crank shaft about the offset portion of which said drum is rotatable, fixed bearings receiving the ends of said crank shaft, a fixedly journaled driving wheel engageable with said drum to rotate it upon oscillation of the crank shaft, catches for holding said drum in engagement with said driving wheel, a ball upon the line, and means operable by said ball for releasing said catches to stop rotation of the drum.

6. A trolling winch comprising a drum upon which the line is received, a crank shaft about the offset central portion of which said drum is rotatable, fixed bearings receiving the ends of said crank shaft, a fixedly journaled driving wheel at one side of said drum, and engageable thereby to rotate the drum, a fixed brake at the opposite side of the drum, and engageable thereby, a spring tending to engage said drum and brake, catches for holding said drum in engagement with said driving wheel in opposition to said spring, a ball upon the line, and means operable by said ball for releasing said catches to permit engagement of the drum and brake.

7. A trolling winch comprising a drum upon which the line is received, a ball fixed upon the line, a crank shaft about the offset central portion of which the drum is rotatable, fixed bearings receiving the ends of said crank shaft, a fixedly journaled driving wheel at one side of the drum, and engageable thereby to rotate the drum, a spring tending to hold the drum out of engagement with the driving wheel, a drum shifting lever secured upon an end of the crank shaft, a thrust bar engageable therewith, a tiltable platform, complemental catches carried by said thrust bar and platform, and operable when engaged to hold the drum in engagement with the driving wheel, and means upon said platform engageable by said ball upon the line as the line is hauled in to release said catch.

8. A trolling winch comprising a drum upon which the line is received, a ball fixed upon the line, a crank arm carrying said drum upon its swinging end, whereby it may be bodily shifted, a fixedly journaled driving wheel at the side of said drum opposite the extension of the line, the drum being engageable therewith, catches operable to maintain the drum and driving wheel in engagement, and means engageable by said ball upon a line in hauling in, and operable to release said catches to permit movement of said drum away from the driving wheel in the direction of extension of the line.

9. A trolling winch comprising a drum upon which the line is received, a ball fixed upon the line, a crank arm carrying said drum upon its swinging end to shift it bodily, a fixedly journaled driving wheel engageable by said drum, a thrust bar slidable relative to the end of said drum shifting lever, a thrust collar fixed thereon, a compression spring interposed between said collar and said lever, a control handle connected to said thrust collar, means constantly tending to disengage said drum and driving wheel, a tiltable platform, complemental catches carried by said platform and thrust bar, and operable when engaged to maintain the drum and driving wheel in engagement, and means upon said platform engageable by said ball in hauling in to tilt the platform and to release said catches.

10. A trolling winch comprising a drum upon which the line is received and a driving wheel, said drum and driving wheel being relatively movable, means manually operable to engage said drum and driving wheel, catches operable thereupon to maintain said drum and driving wheel in engagement, means constantly tending to disengage the drum and driving wheel, and means operable by the line, after a predetermined amount has been hauled in, to release said catches.

Signed at Freeland, Island County, Washington, this 26th day of January 1923.

J. CARL JESPERSEN.