C. A. WILLIAMS.

PURSE NET HAULING MACHINE.

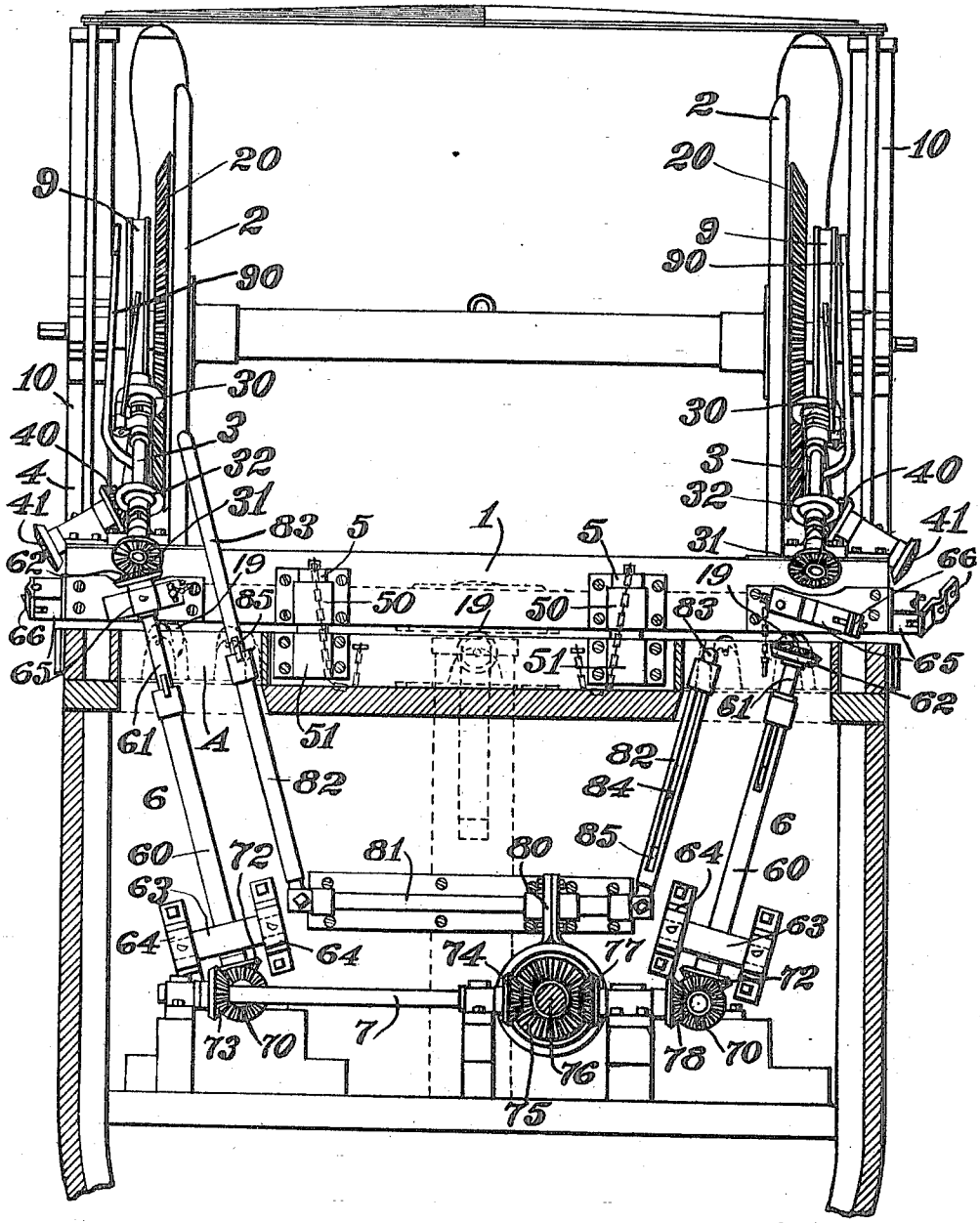
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1,216,530.

Patented Feb. 20, 1917.

4 SHEETS—SHEET 1.

Fig. 1.



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4 SHEETS—SHEET 2.

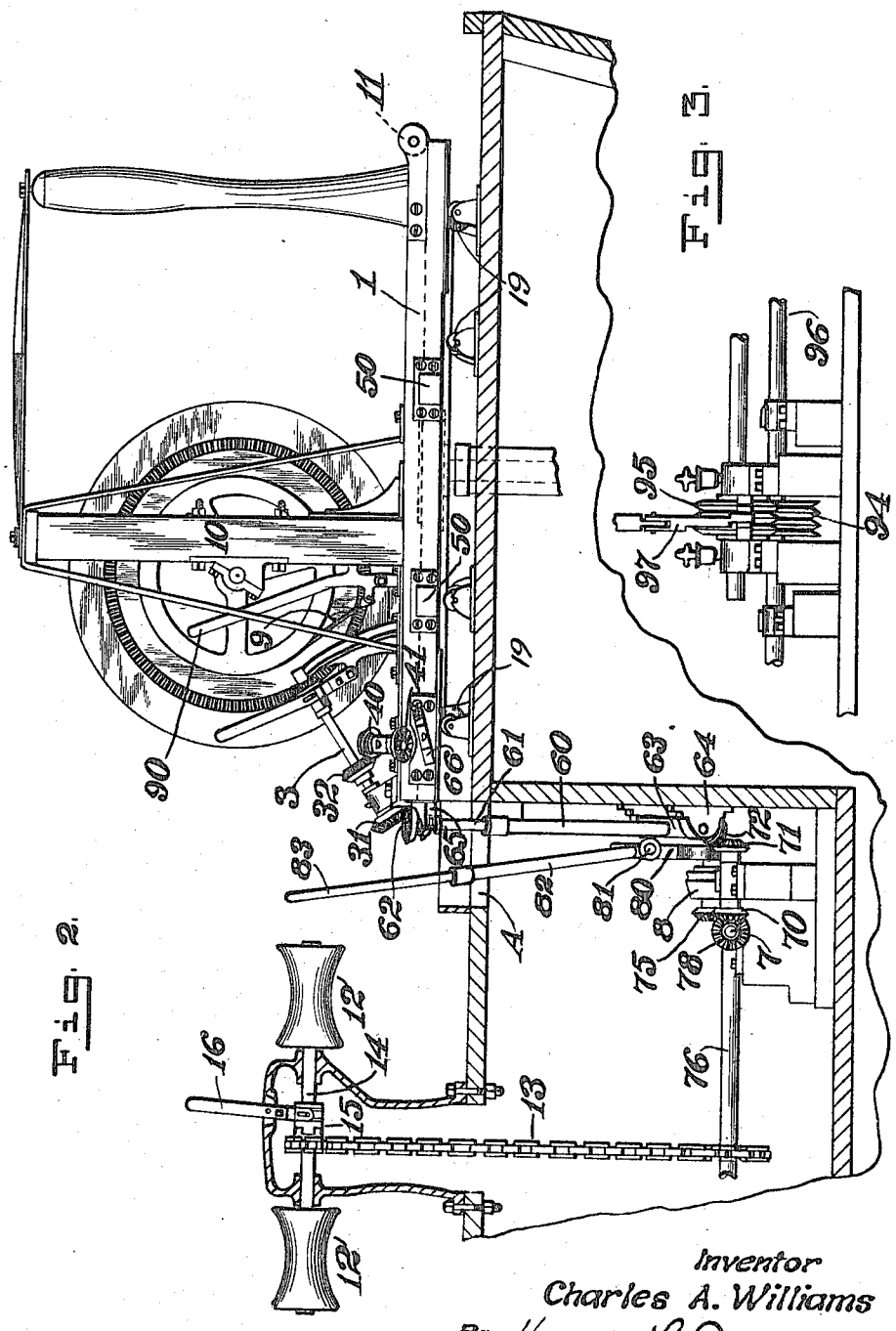


Fig. 2.

Fig. 5.

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4 SHEETS—SHEET 3.

Fig. 4.

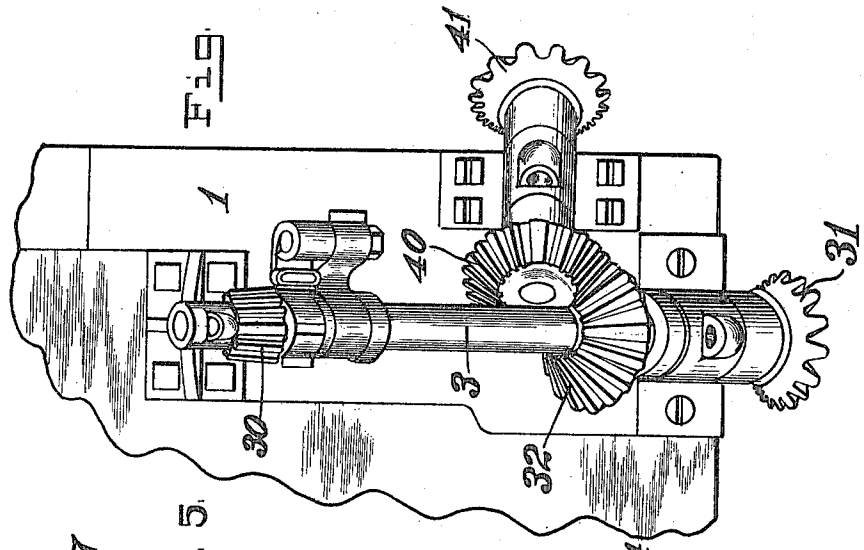


Fig. 5.

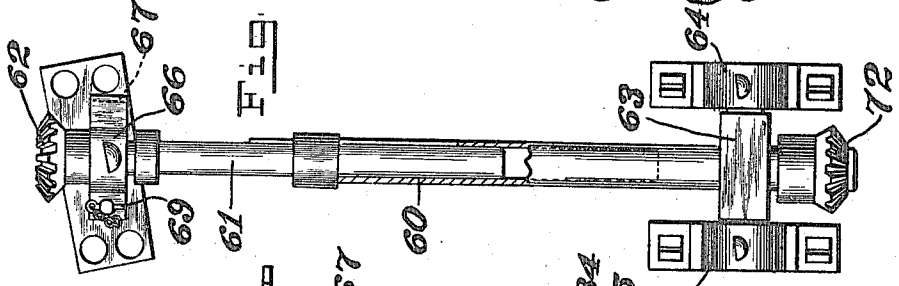


Fig. 7.

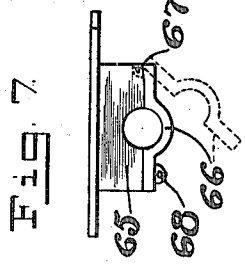


Fig. 6.

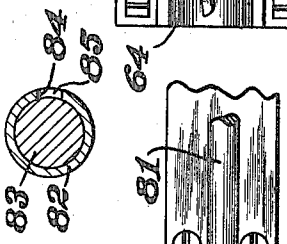
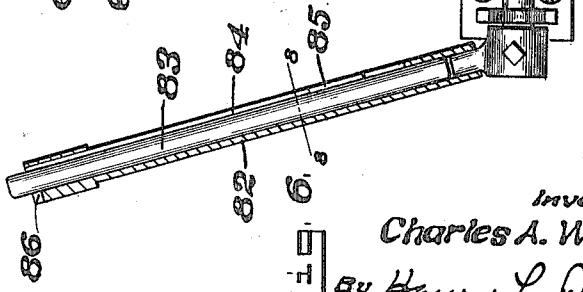


Fig. 8.



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PURSE NET HAULING MACHINE.

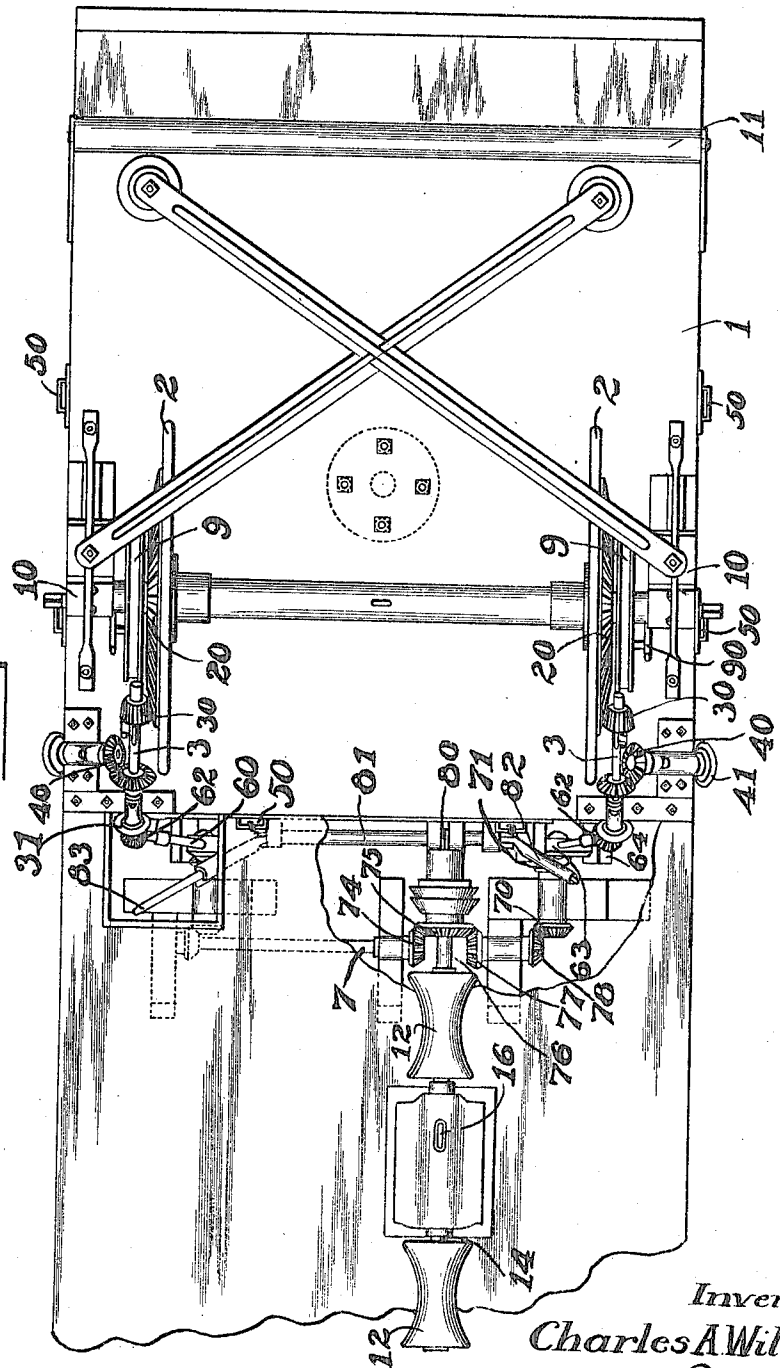
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4 SHEETS—SHEET 4.

Fig. 9



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UNITED STATES PATENT OFFICE.

CHARLES A. WILLIAMS, OF SEATTLE, WASHINGTON.

PURSE-NET-HAULING MACHINE.

1,216,530. Specification of Letters Patent. Patented Feb. 20, 1917.

Application filed October 14, 1916. Serial No. 125,573.

To all whom it may concern:

Be it known that I, CHARLES A. WILLIAMS, a citizen of the United States, and resident of the city of Seattle, county of King, and State of Washington, have invented certain new and useful Improvements in Purse-Net-Hauling Machines, of which the following is a specification.

My invention relates to apparatus employed in fishing and consists of a drum and mechanism for operating and handling said drum for the purpose of hauling large seines.

The object of my invention is to provide a device which may be used for rapidly and conveniently handling large purse seines whereby the casting or hauling in of the same may be accomplished more rapidly and therefore the catch may be often increased.

The particular features of my invention, which I deem to be novel and patentable, will be hereinafter described and particularly defined by the claims.

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

Figure 1 is an elevation of the device, the boat and part of the operating mechanism being shown in transverse section.

Fig. 2 is a sectional elevation taken lengthwise of the boat, the turntable, however, not being in section.

Fig. 3 is a side elevation of the friction driving mechanism used to operate the device.

Fig. 4 shows, in plan view, the bevel gear and shaft mechanism which is mounted at the corners of the turntable and through which the drum is turned.

Fig. 5 is an elevation of one of the telescopic shafts used for driving the mechanism mounted on the turntable.

Fig. 6 is a side elevation, partly in section, of one of the telescopic levers used for controlling the clutch mechanisms.

Fig. 7 shows one of the journal boxes and the manner in which the cap thereof is pivoted to free its shaft.

Fig. 8 is a section through the lower or tubular portion of one of the telescopic shafts.

Fig. 9 is a plan view of my device, a portion of the deck being cut away to show apparatus below deck.

Purse seines are some times made of very large size and, therefore, the labor of casting these seines and of taking them up is very heavy. Where this must be done by hand it is not only very laborious but very slow. It often happens that through bad judgment or otherwise, the seine is put out in a location which is not the best and the school of fish is discovered to be mostly or entirely outside of the area inclosed by the seine. It would, therefore, be very desirable to have means for rapidly taking in the net and recasting it. This work has been most generally done by hand and it is, therefore, relatively slow.

In carrying out my invention I mount a turntable 1 at the stern of the boat. This turntable usually is the width of the boat hull and extends entirely to or very near the extreme stern of the boat. The turntable is supported on wheels 19, or in any other suitable way. Upon this I mount a drum 2, this being journaled in standards 10 carried by the turntable. This drum is of such size that the body of the seine may be secured thereto and stored between the flanges of the drum. It is, therefore, possible, by providing a power connection for turning this drum, to take in the seine quite rapidly. The turntable is provided with a roller 11 on one edge over which the seine is drawn, whereby the friction of the seine upon the turntable is much reduced.

Upon each head of the drum I secure a large bevel gear 20 through which means the drum is turned. I also journal a shaft 3 outside of each head of the drum and upon this is secured a bevel pinion 30 which meshes with the bevel gear 20 carried by the drum. Shaft 3 extends to the edge of the turntable and is provided with a bevel pinion 31 at its lower end, which is adapted to mesh with a complemental bevel pinion carried by a drive shaft which is journaled upon the boat. This connection is made of such character that it may be broken when it is desired to shift the turntable so as to face in another direction. It is designed to have the net-hauling device operate to haul in the seine, either over the stern or over each

side of the boat. Provision is, therefore, made for turning and locking the turntable upon which the drum is mounted, so as to face the drum in either of these directions, and to connect it with the driving mechanism so that it may be turned by power in any one of these positions.

To secure this result I provide a bevel gear 20 and the shaft 3 with its connected bevel pinions 30 and 31 at each end of the drum. I also further provide a complemental shaft 4 carrying bevel gears 40 and 41, of which the bevel gear 40 meshes with a bevel gear 32 carried on shaft 3, and the bevel gear 41 is placed in a position corresponding with that of the bevel gear 31, except that the shafts 3 and 4 extend in vertical planes which are at right angles to each other. The bevel gears 41 are positioned to engage with the bevel gear mounted upon the upper end of the driving shaft.

I provide two lock bolts on each of three sides of the turntable. The turntable, instead of being circular in outline is rectangular. The locking bolts 5 are bars working vertically in guides 50 carried by the turntable and adapted to enter keepers 51 mounted upon the hull of the boat. In either of the three positions mentioned for the turntable, when it is in operation, two of these locking bars 5 will be placed so as to enter the keepers 51 on the hull, and thus hold the turntable firmly against turning.

Two drive shafts 6 are provided, one located toward each of opposite sides of the boat and extending upward to a position such that the bevel gear 62 carried thereby may be brought into mesh with one or the other of the bevel gears 31 or 41 carried by the turntable, when the turntable is locked in one or the other of its positions.

The drive shaft 6 is made of two telescopic parts, the lower section 60 being tubular, and the upper section 61 sliding therein. The lower end of this shaft is journaled in the member 63 which is itself journaled by its ends in bearing 64 so that the shaft may have a slight rocking movement sufficient to enable its upper end to be moved outward so as to disengage from the bevel gears carried by the turntable, and also to free it from its upper bearing 65. This upper bearing 65 is shown in detail in Fig. 7. Its outer member or cap 66 is pivoted at 67 so that it may swing outward, thus freeing the shaft and permitting the shaft to be moved outward. The swinging end of the cap may be secured in any suitable manner, as by providing the cap with a slot through which an ear 68 passes, the whole being secured by a key 69.

The deck of the boat is provided with an opening A through which projects the shaft 6. When the driving connection between one of the shafts 6 and the mechanism on the turntable is broken, the upper section 61 of the shaft is freed from its bearing and is then telescoped downward into the lower section, thus getting this shaft out of the way so that it will not interfere with the swinging of the turntable. The turntable may then be freely swung into the desired position, and one or the other of the drive shafts 6 connected with whichever of the bevel gears 31 or 40 is in position to connect therewith.

The lower end of the shaft 60 has a bevel gear 72 connected therewith, this meshing with a bevel gear 71 carried by a short shaft which extends fore-and-aft of the boat. The forward end of this shaft is provided with a bevel gear 70, which meshes with the bevel gear 73 carried by a shaft 7, which extends transverse of the boat. The other end of the shaft 7 carries a bevel gear 74, which meshes with a gear 75 carried by the main power or drive shaft 76, which shaft extends in a fore-and-aft direction. This latter shaft is driven from an engine in any suitable manner.

A short shaft which is alined with shaft 7, carries two bevel gears 77 and 78 on its opposite ends, the former gear 77 meshing with the large gear 75 and the latter gear 78 meshing with a gear 70 carried upon fore-and-aft shaft similar to the one found at the opposite side of the boat. This short shaft also carries a gear 71 which meshes with gear 72 carried by the lower end of the outer section 60 of the vertical telescopic shaft 6.

The gear 75 on the main driving shaft 76 is not fixed directly to said shaft. It is free to turn on the shaft and is turned through the medium of a friction clutch 8. This clutch is operated through a lever 80 which is secured to a shaft 81 which extends athwart ship and is provided at each end with a telescopic operating lever 82. The upper section 83 of this lever is adapted to telescope with the lower tubular section. This upper section projects through the same opening A as does the driving shaft 6.

The upper section 83 is provided with a key 85 which may slide within a slot 84 formed in one side of the lower tubular section. The upper end of this lower tubular section is provided with a notch 86 into which the key 85 may be placed after the upper section 83 has been raised, whereby the same will be held in raised position until it is desired to lower it. The drum may thus be operated through the friction clutch 8 from either side of the boat.

At each end of the drum I provide a braking surface or disk upon which is

placed a brake band 9, this being operated by lever 90. The brake may, therefore, be applied from either side of the boat.

On the deck of the boat just forward of the turntable I provide one or more gypsy heads or winches 12 on a horizontal shaft which is turned through a sprocket chain 13, or other suitable means, from the shaft 66 below deck. The sprocket wheel upon the shaft 14 is loosely mounted upon the shaft, and it turns this shaft through the medium of a jaw clutch 15, which is controlled by a hand lever 16. These winches would be used for pursing the seine, and then after the seine has been pursed, the seine itself is placed upon the drum and drawn in.

I prefer to provide a second friction device, shown in Fig. 3, for controlling the rotation of the shaft 76. This device consists of two friction disks 94, 95, one mounted on the shaft 76 and the other upon a shaft 96 which is alongside thereof, and from which it is turned. This friction device is controlled by a lever 97, and means may be provided by which this may be controlled from above deck.

What I claim as my invention is:

1. A net hauling apparatus comprising a drum, a turntable supporting said drum, a fixedly positioned driving shaft adjacent the edge of the drum and a plurality of driving means for said drum mounted on the turntable to interchangeably engage with said driving shaft as the turntable is shifted to different positions.

2. A net hauling apparatus comprising a drum, a turntable supporting said drum, a fixedly positioned driving shaft adjacent the edge of the drum, driving shafts for the drum mounted on the turntable and extending, each to a different position about its edge and adapted to be individually connected with said first named driving shaft as the turntable is turned to different positions.

3. A net hauling apparatus comprising a drum, a turn-table supporting said drum, bevel gears secured to each end of said drum, a plurality of stub shafts carried by said turn-table and terminating at each end in bevel gears, the gear at one end of each shaft meshing with the gear at an end of the drum, a fixedly positioned driving shaft and a gear at one end of said shaft adapted to engage the second gears upon said stub shafts.

4. A net hauling apparatus comprising a drum, a turn-table supporting said drum, bevel gears secured to each end of said drum, a plurality of stub shafts carried by said turn-table, a gear upon one end of each of said stub shafts meshing with a gear at an end of the drum, and means for driving said drum through any one of said stub shafts from a fixed point without the turn-table.

5. A net hauling apparatus comprising a drum, a turntable supporting the drum, a bevel gear and shaft drive for each end of the drum carried by and extending to the edge of the turntable, a fixedly positioned driving shaft having an adjustable upper end and a bevel gear thereon adapted to be engaged with the bevel gear of either of the shafts carried by the turntable.

6. A net hauling apparatus comprising a drum, a turntable supporting the drum, a brake on the drum, a power driving means for said drum having a plurality of like sections carried by the turntable and a plurality of sections removed from the turntable, and means for connecting said sections to drive the drum from different positions of the turntable.

7. A net hauling apparatus comprising a drum, a turntable supporting the drum, a shaft and bevel gear drive for the drum mounted upon the turntable and having a bevel gear at the edge of the turntable, a vertical driving shaft having a telescopic upper section and a bevel gear thereon adapted to engage the bevel gear at the edge of the turntable.

8. A net hauling apparatus comprising a drum, a turntable upon which said drum is mounted, a plurality of drum driving shafts mounted upon the turntable and extending to the edge of the turntable and carrying a bevel gear upon this end, a plurality of vertical shafts having bevel gears adapted to be put in mesh with one or another of the bevel gears carried by the turntable, said vertical shafts being mounted to permit lateral movement of their upper ends to engage and disengage them from their bearings.

9. A net hauling apparatus comprising a drum, a turntable supporting the drum, means for locking said drum in a plurality of positions, and means for driving said drum comprising parts fixedly positioned without the turntable, and a plurality of parts carried by the turntable and adapted to be in turn engaged with said fixedly positioned parts as the turntable is turned.

10. A net hauling apparatus comprising a square platform mounted upon the stern of a boat to turn about a vertical axis, means for locking said platform in a plurality of positions, a drum mounted upon said platform, drum driving mechanism extending to a plurality of positions symmetrically placed about the platform, and driving means without the platform positioned to be connected with one of a plurality of the driving means carried by the drum.

11. A net hauling apparatus comprising a drum adapted to receive the net thereon, a

platform mounted to turn about a vertical axis as a turntable and having the drum mounted thereon, means for locking the turntable in a plurality of positions, a plurality of drum driving mechanisms mounted upon and extending to positions symmetrically placed at the edges of the turntable, a plurality of drum driving mechanisms disposed in like symmetrical positions without the turntable and at opposite sides of the boat and adapted to be actuatively connected with the complemental mechanisms upon the turntable and means for controlling said driving mechanisms similarly located at opposite sides of the boat.

Signed at Seattle, Washington, this 7th day of October, 1916.

CHARLES A. WILLIAMS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."