June 21, 1932. E. LIISANANTTI 1,863,989

BOAT

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FIG. 1

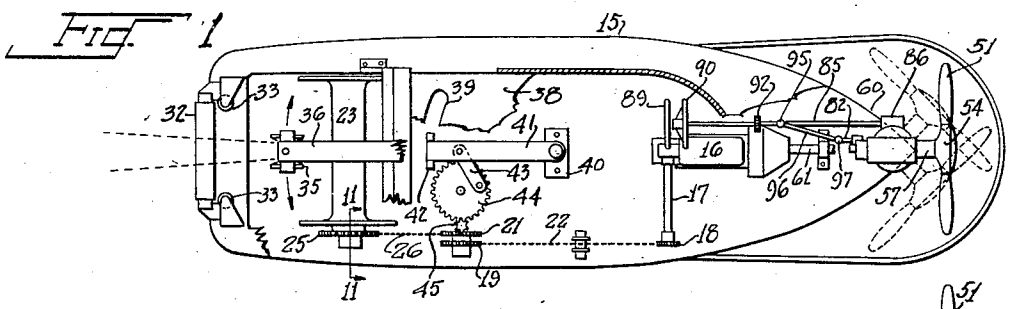


FIG. 2

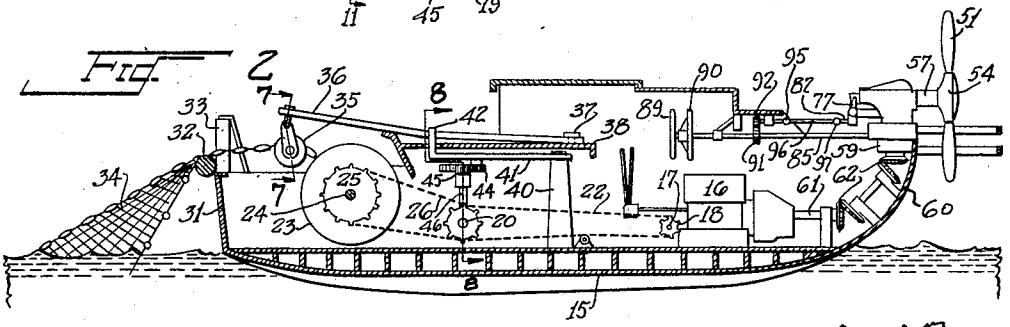
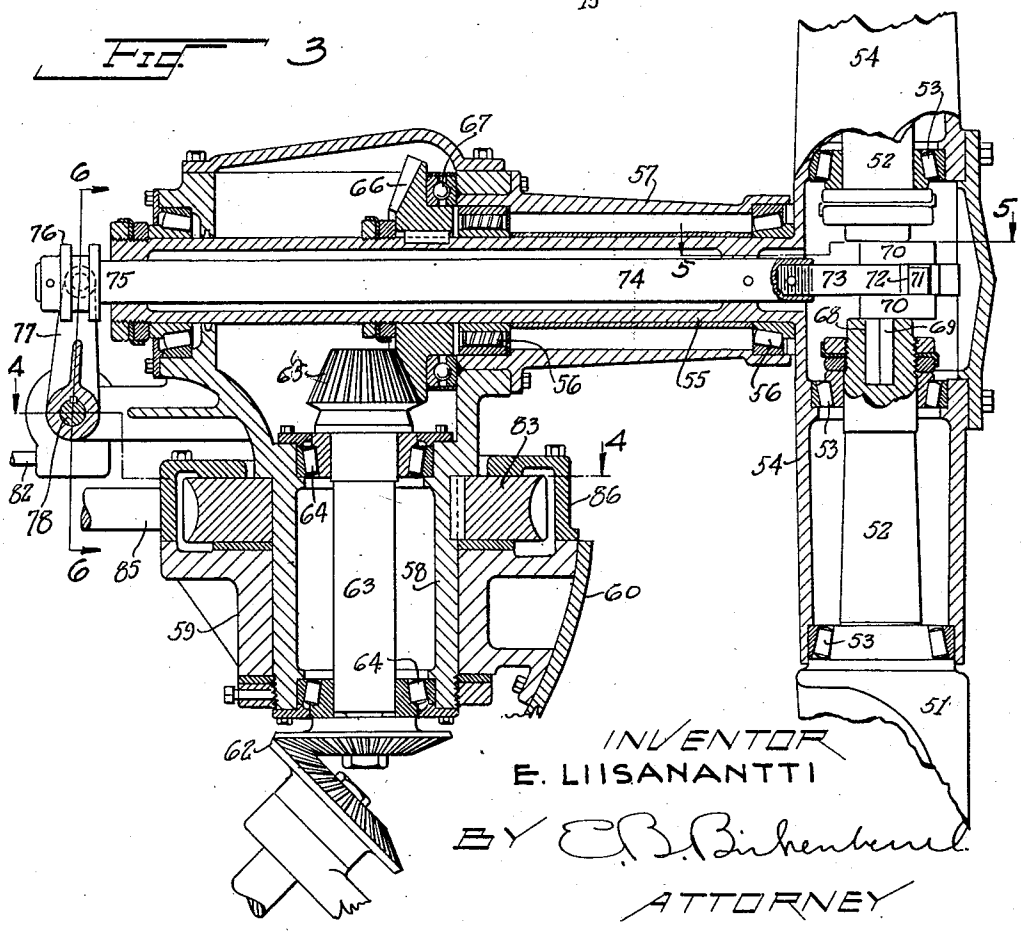


FIG. 3



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FIG. 4

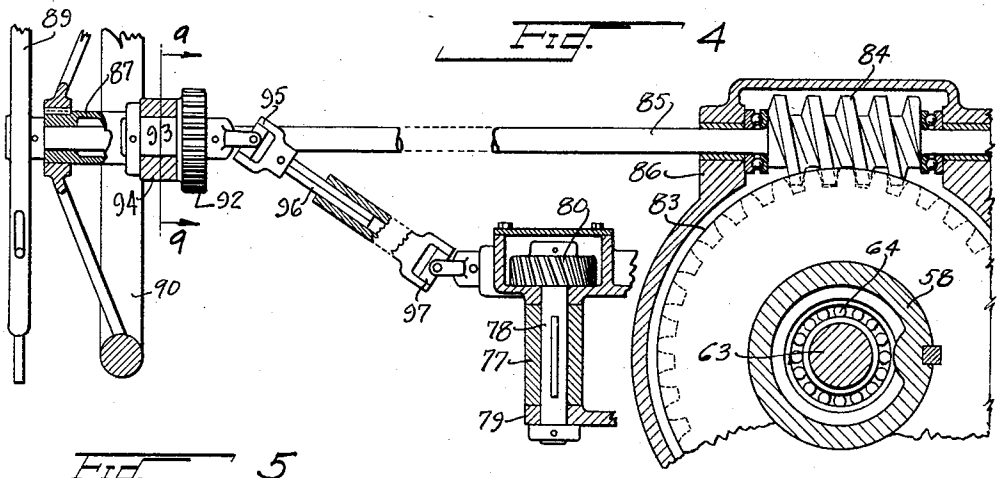


FIG. 5

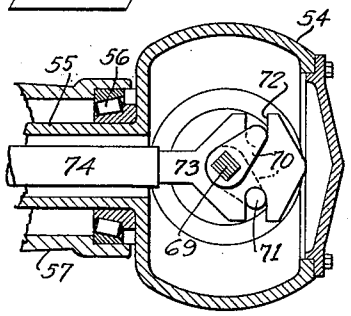


FIG. 7

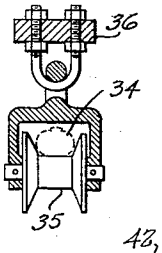


FIG. 6

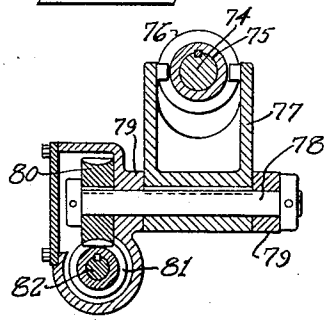


FIG. 11

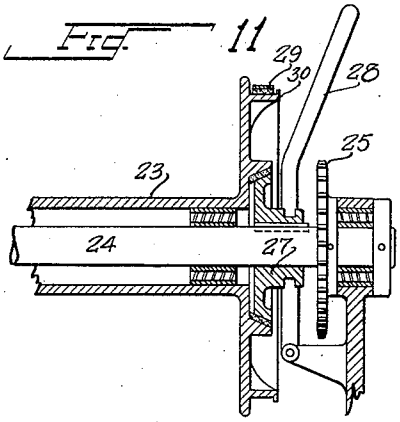


FIG. 8

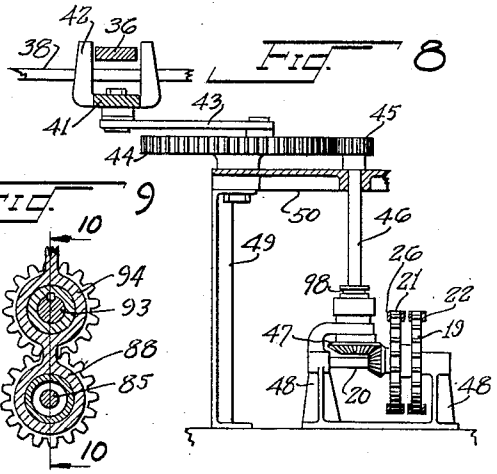
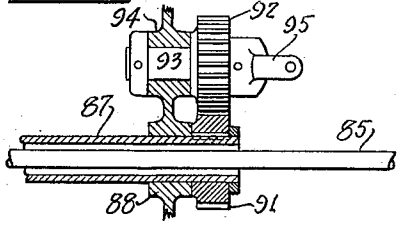


FIG. 9

FIG. 10



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Patented June 21, 1932 1,863,989

UNITED STATES PATENT OFFICE

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BOAT

Application filed December 17, 1929. Serial No. 414,625.

This invention relates generally to fishing boats and particularly to a special form of driving means therefor.

The main object of this invention is to provide a special form of driving mechanism for power boats in which the driving mechanism may also be employed to steer and control the direction of travel of said boat.

The second object is to produce a propelling device for fishing boats which will eliminate the necessity of a rudder and also any possibility of the propeller becoming fouled on the nets.

The third object is to provide a form of fishing boat having a novel form of net handling apparatus.

The fourth object is to provide a special form of propeller adaptable to use on boats and also on sleds and wheeled vehicles.

The fifth object is to provide a novel form of reversible propeller.

These, and other objects, will become more apparent from the specification following as illustrated in the accompanying drawings.

Figure 1 is a plan of the boat with parts broken away.

Figure 2 is a longitudinal section through same.

Figure 3 is an enlarged section through the propeller drive.

Figure 4 is a section taken along the line 4—4 in Figure 3.

Figure 5 is a section taken along the line 5—5 in Figure 3.

Figure 6 is a section taken along the line 6—6 in Figure 3.

Figure 7 is a section taken along the line 7—7 in Figure 2.

Figure 8 is a section taken along the line 8—8 in Figure 2.

Figure 9 is a section taken along the line 9—9 in Figure 4.

Figure 10 is a section taken along the line 10—10 in Figure 9.

Figure 11 is a section taken along the line 11—11 in Figure 1.

Similar numbers of reference refer to similar parts throughout the several views.

Referring in detail to the drawings, there is shown the hull 15 of a fishing boat in the bow of which is placed an engine 16 preferably of the internal combustion type on whose power take-off shaft 17 is a sprocket pinion 18 which drives the sprocket wheel 19 on the countershaft 20 on which is also mounted a sprocket wheel 21. Motion is transmitted from the pinion 18 to the sprocket 19 through the chain 22.

At the stern of the boat is mounted a cable winding drum 23 which is normally free to turn on the shaft 24 on which is secured a sprocket wheel 25 which is driven from the sprocket wheel 21 by means of the chain 26. On the shaft 24 is secured a clutch disk 27 adapted to frictionally engage the drum 23 under control of the lever 28. A band brake 29 encircles the flange 30 of the drum 23 and is controlled in any convenient manner common to such devices.

Mounted over the stern end 31 of the boat is a horizontal roller 32 at whose ends are the upright rollers 33 all of which are adapted to guide the net 34 into the form of a narrow web, in which form it passes over the threading spool 35 suspended from the rocker arm 36 which is pivotally mounted at one end on the pin 37 which is, in turn, mounted at the forward end of the horizontal plate 38 which extends across the full width of the boat and is secured to the sides thereof. The plate 38 is provided with a curved slot 39, its center being on the center of the standard 40 on which is hinged the operating arm 41 whose upturned end 42 is forked to receive the rocker arm 36 on the top side of the plate 38.

Motion is imparted to the arm 41 by means of a link 43 which connects same to a crank gear 44 which, in turn, is driven by a pinion 45 on the shaft 46 which is driven through the bevel gears 47 from the shaft 20. Suitable standards 48 support the shaft 20 and a standard 49 supports a table 50 on which are mounted the gears 44 and 45. It is desirable that the threading spool 35 be provided with lateral freedom to facilitate the winding of the net 34 on the drum 23.

The mechanism thus far described relates principally to the net handling gear.

Turning now to the boat propelling and steering apparatus at the bow it will be seen

to consist primarily of a pair of air propeller blades 51 each of which is rotatably mounted on its longitudinal axis on a shaft 52 which journals in the bearings 53 mounted in a hub 54 which is formed on the outer end of the driving sleeve 55 which, in turn, journals in the bearings 56 in the propeller housing 57 whose lower portion 58 is rotatably mounted in a bracket 59 which is attached to the bow 60.

From the engine 16 extends a drive shaft 61 which includes a number of bevel gears 62 for the purpose of delivering a rotative movement to the upright propeller drive shaft 63 which journals in the bearings 64 in the portion 58 of the housing 57. On the upper end of the shaft 63 is a pinion 65 which meshes with the gear 66 which is keyed directly to the driving sleeve 55. A suitable thrust bearing 67 is provided between the gear 66 and the housing 57.

The inner ends of the shaft 52 are provided with square recesses 68 into each of which fits a square end 69 of a crank 70. The ends 71 of each crank 70 extends into its respective slot 72 of the propeller pitch controlling rod 73 which is threaded into the end of a central tube 74 which is slidably mounted within the sleeve 55 and on its projecting end 75 is secured a grooved collar 76 which engages a forked arm 77 which is keyed on the shaft 78, which journals in the housing 79.

On the shaft 78 is secured a worm wheel 80 which meshes with a worm 81 on the shaft 82. On the member 58 is secured the worm wheel 83 which meshes with a steering worm 84 which is rotated by means of a shaft 85 which journals in the housing 86. The shaft 85 extends through a tubular sleeve 87 which journals in the bearing 88 and has mounted on its end a steering wheel 89 by means of which the worm 84 can be rotated and through which the directional position of the propeller blade 51 can be controlled.

The sleeve 87 has secured thereon a wheel 90 by means of which the sleeve 87 can be rotated. On the end of the sleeve 87 is secured a gear 91 which meshes with a gear 92 on the shaft 93 which journals in the bearing 94. The shaft 93 is provided with a universal coupling 95 at one end thereof which, through a spline shaft 96 and a second coupling 97, can transmit motion to the shaft 82. In other words, rotation of the wheel 90 will cause a change in the pitch of the propeller blades 51 to the extent that the speed of the boat can be varied, as well as its direction of travel, by a mere manipulation of the wheel 90, whereas the rotation of the steering wheel 89 deals solely with the direction of travel in a steering sense.

In operation it is only necessary for the operator to start his engine and manipulate the controls 89 and 90, as just described, in order to propel the boat in either direction—that is, either astern or ahead, as well as to control its course. The advantages of doing so are of course apparent, especially when viewed in connection with the handling of a net.

Under ordinary circumstances when propellers are employed rudders are also used, and it is a matter of common occurrence to have either the rudder or propeller or both become fouled with the nets causing considerable losses of time and money.

In order that it will be possible to better control the operation of the threading spool 35 a clutch 98 is provided on the shaft 46 which will permit the movement of the arm 36 to be controlled as required.

It will also be noted that with a boat of this type that should same become beached in sand or mud there is no danger of the propeller or rudder becoming fouled thereby. The same of course applies to objects floating in the water.

As previously stated, this device, especially the propelling and steering portion thereof, is adaptable to land traveling vehicles and sleds as well as to floating objects; I therefore do not wish to be limited to the particular embodiment illustrated in the drawings, but intend to cover all such forms and modifications thereof as fall fairly within the appended claims.

I claim:

1. In a fishing boat the combination of a hull, a net handling drum mounted on the stern of said hull, fair leading rolls on said hull adapted to narrow the net for winding, a spooling means for guiding the narrowed end along said drum, and a power actuated propeller at the bow of said boat having means for varying its direction of pull.

2. In a fishing boat the combination of a hull, a net handling drum mounted at the stern of said hull, means for driving said drum, clutch brake means for controlling the operation of said drum, fair leading rolls for narrowing a net prior to winding on said drum, and a threading spool between said fair leading rolls and drum having means for moving same along the face of said drum for the purpose of smoothly winding a net thereon.

EVERT LIISANANTTI.