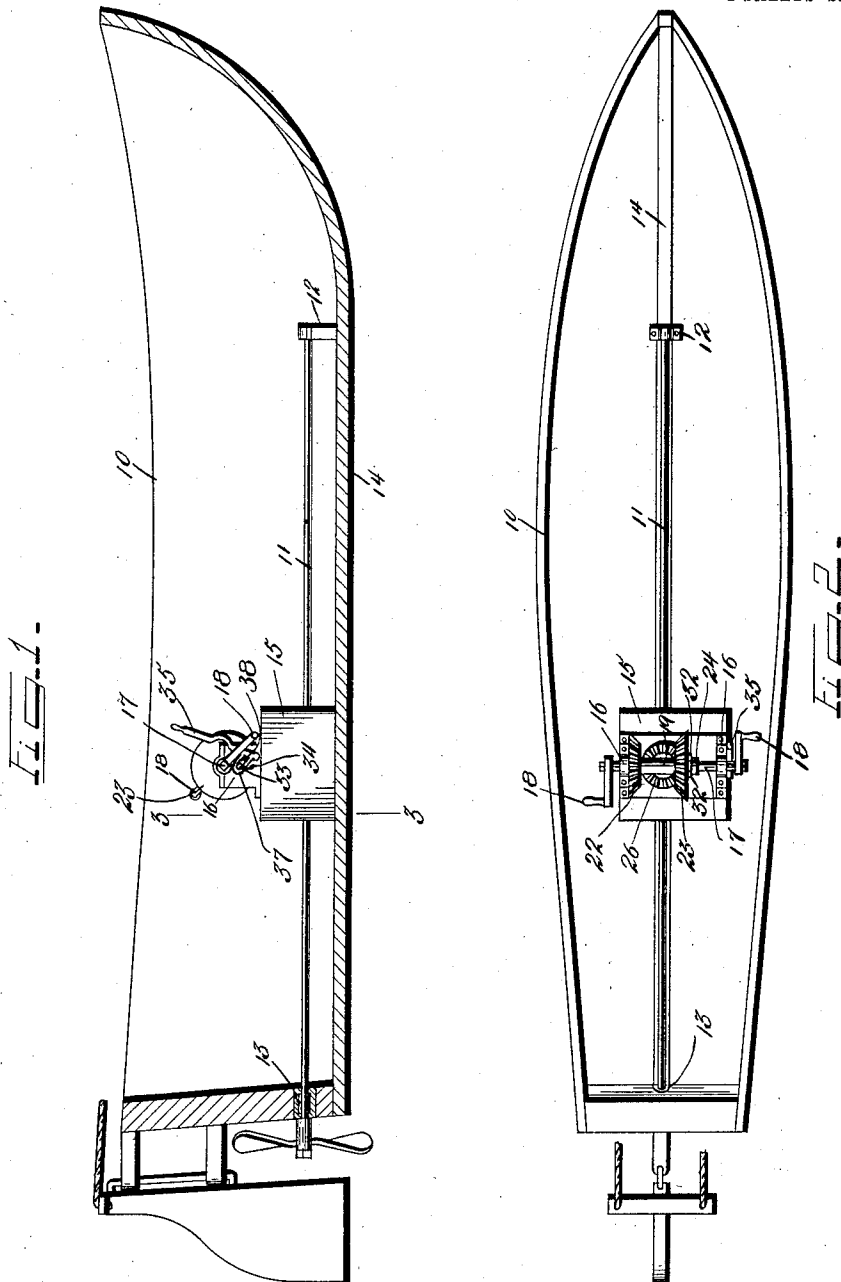


E. P. MOLLENAUER.
BOAT PROPELLING DEVICE.
APPLICATION FILED MAY 17, 1912.

1,049,755.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.



Witnesses

E. P. Mollenauer

Francis Boyle

Inventor
E. P. Mollenauer

By

Charles H. H. H.

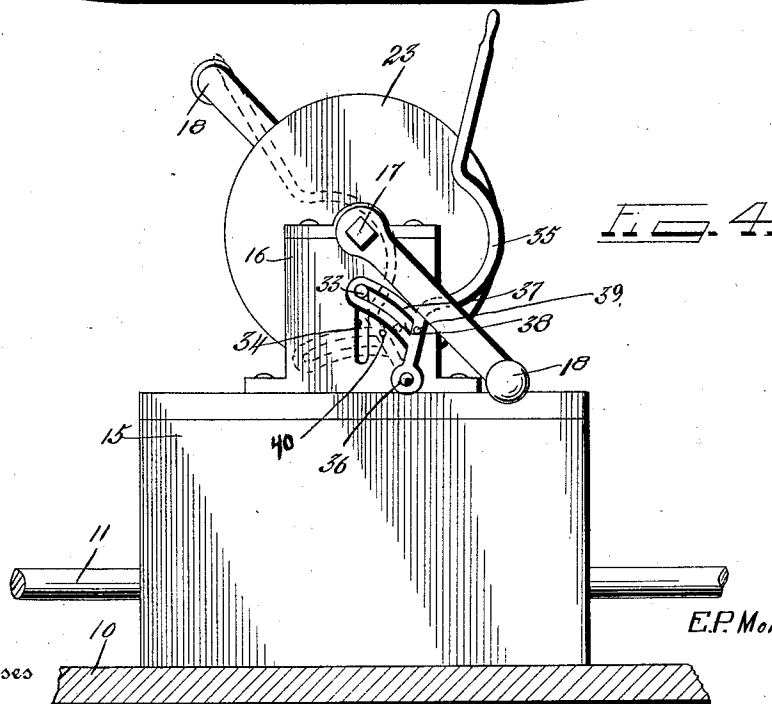
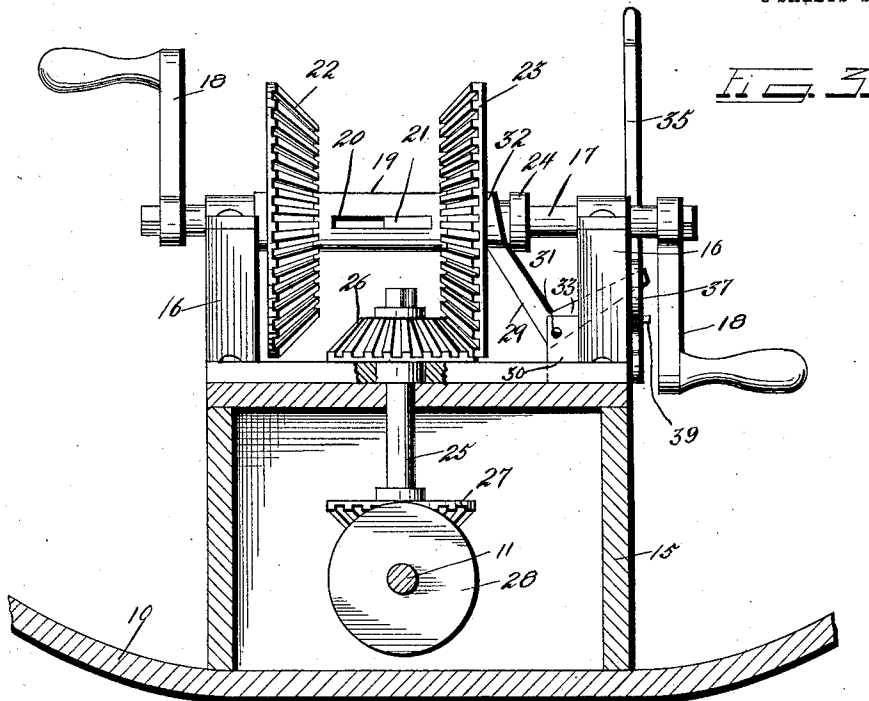
Attorney

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2 SHEETS—SHEET 2.



Witnesses

Francis Boyle

Inventor
E. P. Mollenauer

By Charles Chandler
Attorneys

UNITED STATES PATENT OFFICE.

ERNEST P. MOLLENAUER, OF CANONSBURG, PENNSYLVANIA.

BOAT-PROPELLING DEVICE.

1,049,755.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed May 17, 1912. Serial No. 697,963.

To all whom it may concern:

Be it known that I, ERNEST P. MOLLENAUER, a citizen of the United States, residing at Canonsburg, in the county of Washington, State of Pennsylvania, have invented certain new and useful Improvements in Boat-Propelling Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to boat propelling mechanisms and has for an object to provide a novel manually operatable crank shaft and gearing connecting this crank shaft with the propeller shaft of the boat, there also being a novel shifting mechanism for effecting the rotation of the propeller shaft in either of two directions or throwing said propeller shaft out of gear with said crank shaft.

With the above object in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claim.

In the accompanying drawings forming part of this specification:—Figure 1 is a longitudinal sectional view of a boat equipped with my improved propelling mechanism. Fig. 2 is a plan view of the boat and device. Fig. 3 is a cross sectional view taken on the line 3—3 Fig. 1. Fig. 4 is a side elevation of the parts shown in Fig. 3 with the shifting lever shown dotted in position to reverse the mechanism.

Referring now to the drawings in which like characters of reference designate similar parts, 10 designates a small boat of ordinary construction, and 11 the propeller shaft thereof, this shaft being arranged within the boat and secured at the forward end in a pedestal 12 and at the rear end in a stuffing box 13, these bearings serving to maintain the propeller shaft parallel with the keel 14 of the boat.

Arranged within the boat is a casing 15 and mounted on the casing are spaced pedestals 16 in which the ends of a shaft 17 are journaled, the shaft being equipped terminally outside of the pedestals with crank handles 18 by means of which the shaft may

be rotated. Slidably fitted on the shaft between the pedestals is a sleeve 19 having a longitudinal slot 20 in one side through which a guide lug 21 carried by the shaft extends, this lug contacting with the ends of the slot and limiting movement of the sleeve in either direction longitudinally of the shaft. The sleeve is equipped with spaced bevel gears 22 and 23 having their toothed surfaces confronting each other. Furthermore the sleeve is provided terminally with a collar 24 which confronts the outer face of one of the gears.

A stand shaft 25 is journaled in the top of the casing and is equipped at the upper end with a bevel gear 26 which is adapted to mesh with either of the bevel gears 22 or 23. The lower end of the stand shaft is equipped with a bevel gear 27 which meshes with a bevel gear 28 carried by the propeller shaft.

For shifting the sleeve and thereby selectively bringing either of the bevel gears 22 or 23 into mesh with the bevel gear 26 of the stand shaft, a bell crank lever 29 is pivoted at the elbow on a lug 30 attached to one of the pedestals, a pivot pin 31 being passed through the lug and bell crank lever as shown. The upright leg of the bell crank lever is bifurcated as shown at 32 and straddles the sleeve between the collar 24 and adjacent bevel gear 23. The horizontal leg 33 of the bell crank lever is engaged through a slot 34 formed in the adjacent pedestal. An operating lever 35 is pivotally attached at the lower end to the pedestal through the instrumentality of a pivot pin 36, and is furthermore equipped on one side with a laterally disposed upwardly inclined arm 37 which is provided with a longitudinal slot 38 through which the free end of the bell crank lever arm 33 projects.

In operation suppose the operating lever to be in upright position and the bell crank lever horizontal leg at rest in the center of the lever slot 38. By now shifting the lever rearwardly the bell crank lever leg will be moved to the lower end of the slot with a resultant outward rocking of the upright leg of the bell crank lever whereby the sleeve is shifted outwardly and brings the bevel gear 22 into mesh with the bevel gear 26. To bring the bevel gear 23 into mesh with the bevel gear 26 the operating lever is shifted forwardly upon which the reverse movement of the parts from that above described

takes place. When either of the bevel gears carried by the sleeve is in mesh with the bevel gear carried by the stand shaft the boat will be propelled by manual manipulation of the crank shaft since the sleeve is
5 locked against rotation on the crank shaft.

For locking the operating lever in any of three positions whereby to maintain the driving shaft 17 in position to advance,
10 back, or disconnect the driving mechanism, a plug 39 is loosely inserted in an opening formed in the operating lever and may be selectively inserted in any of the three openings 40 shown.

15 What is claimed, is:—

The combination with a boat, of a propeller shaft, spaced pedestals within the boat, a crank shaft journaled in said pedestals and having terminal cranks disposed outside of said pedestals, a sleeve non-rotatably
20 and slidably fitted on said shaft between

said pedestals, spaced bevel gears fixed on said sleeve, a stand shaft between said gears having an operative connection with said propeller shaft and having a bevel gear
25 adapted to mesh with either of said spaced gears, a bell crank lever pivoted on one of said standards having an upright leg clutching said sleeve for shifting the same, and an operating lever pivoted at the lower end on
30 said pedestal and provided with an upwardly inclined lateral arm having a slot receiving the free leg of said bell crank lever, and means for holding said operating lever in various adjusted positions.
35

In testimony whereof, I affix my signature, in presence of two witnesses.

ERNEST P. MOLLENAUER.

Witnesses:

JULIA MOLLENAUER,
B. M. KELSO.

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