

1,163,352.

Fig. 1

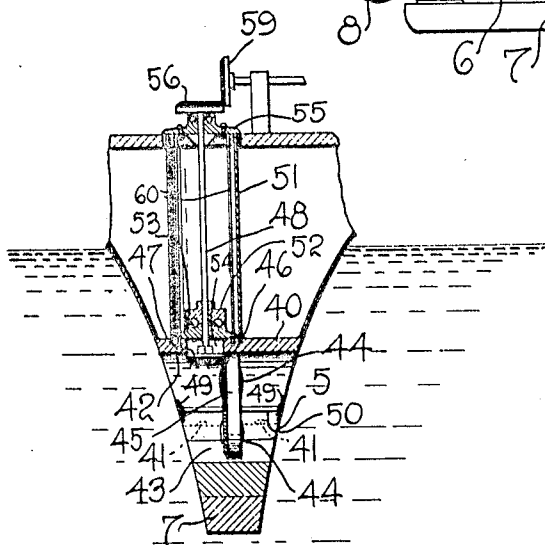
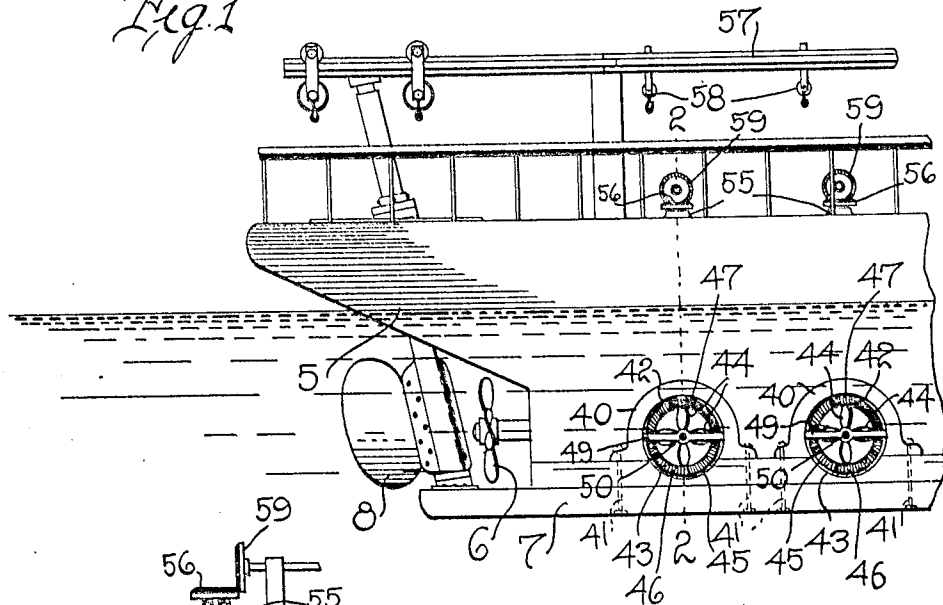


Fig. 2

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STEERING-PROPELLER FOR VESSELS.

1,163,352.

Specification of Letters Patent.

Patented Dec. 7, 1915.

Application filed August 2, 1915. Serial No. 43,303.

To all whom it may concern:

Be it known that I, CHARLES W. LINSKOTT, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Steering-Propellers for Vessels, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improved steering propeller for vessels and has for its primary object to provide a device for supplementing the action of the ordinary rudder with which the vessel is equipped so as to facilitate and quicken the turning movement of the vessel.

It is another object of my invention to provide a rotary steering propeller for the above purpose, which is so mounted in the hull of the vessel that it is entirely protected against possible injury by foreign objects, in the movement of the vessel.

The invention has for a further object to provide a rotary steering propeller applicable to either steam or sailing vessels, and improved means for transmitting power to said propeller, which may be easily and quickly removed or placed in position.

With the above and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which,

Figure 1 is a side elevation of a portion of the vessel, showing the same provided with a pair of my improved rotary steering propellers; and Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1.

As above stated, the present invention resides in the provision of an improved rotary steering device which is employed to supplement the action of the usual rudder mounted in the stern of the vessel, whereby the turning movement of the vessel may be facilitated in cases of emergency, and the present application constitutes, in part, a continuation of my prior pending application for patent, filed May 5, 1915, Serial No. 26,028.

In the accompanying drawing, 5 designates the stern portion of a vessel. It will be understood that the present invention is not limited to any particular type or construction of the vessel; but is equally applicable to both steam and sailing vessels. I have

shown, in the present instance, a vessel equipped with the usual screw-propeller 6, and having a keel 7 extending rearwardly beneath said propeller to constitute a seat or support for a rudder 8. This rudder is preferably constructed and mounted in the manner shown and described in my prior application above referred to.

In order to supplement the action of the rudder 8 and quicken the turning movement of the vessel, I provide the auxiliary steering device forming the subject matter of the present application. This steering device, when employed upon a single screw-steamer, is preferably located under the fore-foot or the bow of the vessel's hull; but for large, high-speed vessels having twin or quadruple propelling screws, the auxiliary steering device is preferably installed in the "skeg" or "dead-wood," forwardly of the propelling screw and the rudder, and at such point as will not interfere therewith, as clearly shown in Fig. 1. Provision is made in the "skeg," immediately above the keelson of the vessel, for a metal casting which is fixed in place by means of the vertical bolt 41 passing through the ends of the casting, the keelson and the keel. The central portion of the casting 40 is cut out or recessed, as at 42, and the keelson is also recessed, as shown at 43. These opposed recesses accommodate the rotary steering member which consists of a series of propeller blades 44 connected together by an annular metal band or rim 45 which is shrunk and permanently secured upon said blades. The rim or band is provided upon one face with gear teeth, as shown at 46, and with the same, the driving gear 47, fixed upon the lower end of the vertical shaft 48, is engaged. Horizontal straps or bars 49 are secured to opposite sides of the casting 40 and extend across the recess 42, and in these straps the ends of the shaft 50 of the rotary steering member are journaled.

A well or casing 51 is built in the hull of the vessel and extends below the deck thereof. This casing provides a protecting housing for the shaft 48. Upon the shaft 48, adjacent its lower end, a collar 52 is fixed, and a bearing block 53 is disposed in the lower end of the casing 51 and seated upon the casting 42. The casting 42 is further provided with an opening, shown at 54, which is slightly greater in diameter

than the diameter of the pinion 47, so that the shaft may be lifted from the well, when desired. Between the collar 52 and the bearing member 53, rollers or bearing balls are arranged. A cap 55 is secured upon the upper end of the well or casing 51, and this cap is connected by a plurality of vertical rods 60 to the bearing block 53, said rods being fixed in the block and projecting below the same, as clearly shown in Fig. 2. The extremities of these rods are adapted to seat in recesses formed in the casting 40. Upon the upper end of the shaft 48, projecting above the cap 55, the gear 56 is fixed, anti-friction bearing members being arranged between the face of said gear and the opposed face of the cap 55. 57 designates a longitudinally disposed track suitably mounted above the deck of the vessel and upon which the sheave block, indicated at 58, is mounted for travel. A hoist chain which is trained over the sheave, is adapted to be connected to the upper end of the shaft 48, whereby the same may be readily removed from the well 51 or replaced in operative position. It is, of course, obvious that in place of the gearing above described, a miter or bevel gear or a worm drive gearing may be substituted. The power gear, shown at 59, which meshes with the gear 56, may be driven from a gas engine, electric motor, or any other suitable source of power. It is also to be borne in mind that, while I have shown only one of the rotary steering devices, the same may be employed in multiples of two or more. By the provision of this rotary steering member, the action of the rudder 8 is supplemented so that the vessel may be quickly turned and liability of collision with other vessels thus avoided. It is also to be particularly observed that the vertical plane of rotation of the rotary propeller is coincident with the central longitudinal line of the vessel's hull so that the blades of the propeller are entirely housed and protected against mutilation or distortion by logs or other objects striking against the sides of the vessel. It is, of course, apparent that the vessel is turned in one direction or the other by means of the rotary propeller, by simply transmitting rotation to the propeller blades in the proper direction.

From the above, it will be appreciated that the present invention is in the nature of a life-saving appliance for vessels as it, to a great extent, obviates the probable loss of life due to shipwreck or collision. The rotation of the steering member may be easily and quickly reversed by the utilization of a suitable lever under the control of the operator, so as to quickly turn or steer the vessel in the desired direction.

From the foregoing description, taken in connection with the accompanying drawing,

the construction, manner of operation, and several advantages of my invention will be clearly and fully understood. By mounting the auxiliary steering propeller in the manner referred to, the same is protected against injury without, in any way, lessening its effectiveness in operation.

The invention as a whole is also comparatively simple in its construction and may be embodied in various types of vessels without greatly increasing the cost thereof.

Owing to the easy accessibility of the several parts of the device, the same may be readily removed or replaced in operative position with a minimum of manual labor or loss of time in cases of emergency.

While I have shown and described the preferred construction and arrangement of the several elements employed, it is to be understood that the invention is susceptible of considerable modification therein and I, therefore, reserve the privilege of resorting to all such legitimate changes as may be fairly embodied within the spirit and scope of the invention as claimed.

Having thus fully described my invention, what I desire to claim and secure by Letters Patent is:—

1. The combination with a vessel, of a rotary steering device including a casting fixed in the hull of the vessel, a rotary steering member mounted in said casting, a vertically disposed casing, a bearing and means for seating said bearing upon the casting within the lower end of the casing and holding the bearing against rotary movement, a vertical shaft disposed through said casing and mounted in the bearing, gearing connecting said shaft to the rotary steering member, and means for elevating the vertical shaft and its bearing to the deck of the vessel.

2. The combination with a vessel, of a rotary steering device including a casting fixed in the hull of the vessel, a rotary steering member having a transversely disposed shaft journaled in bearings on said casting, a vertically disposed casing, an operating shaft removably mounted in said casing and provided upon its lower end with a gear, an annular gear on one face of said rotary steering member engaged by the gear on said shaft, and means for removing the operating shaft from the deck of the vessel or placing the same in operative position.

3. The combination with a vessel, of a rotary steering device including a casting fixed in the hull of the vessel, a rotary steering member mounted in said casting and having a plurality of blades rotating in a vertical plane coincident with the central longitudinal line of the vessel, a vertically disposed casing, a cap for said casing, a bearing, a vertical shaft mounted in the cap and bearing, a plurality of rods connecting

said can and bearing and adapted to seat
at their lower ends in recesses formed in
said casting, gearing connecting said verti-
cal shaft to the rotary steering member, and
5 means for elevating the vertical shaft and
its bearing to the deck of the vessel.

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

CHARLES W. LINSKOTT.

Witnesses:

ETTA WHIPPLE,
ALBERT B. LINCOLN.

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