W. D. HAYNES.

PROPELLER.

APPLICATION FILED SEPT. 1, 1909.

957,056.

Patented May 3, 1910.

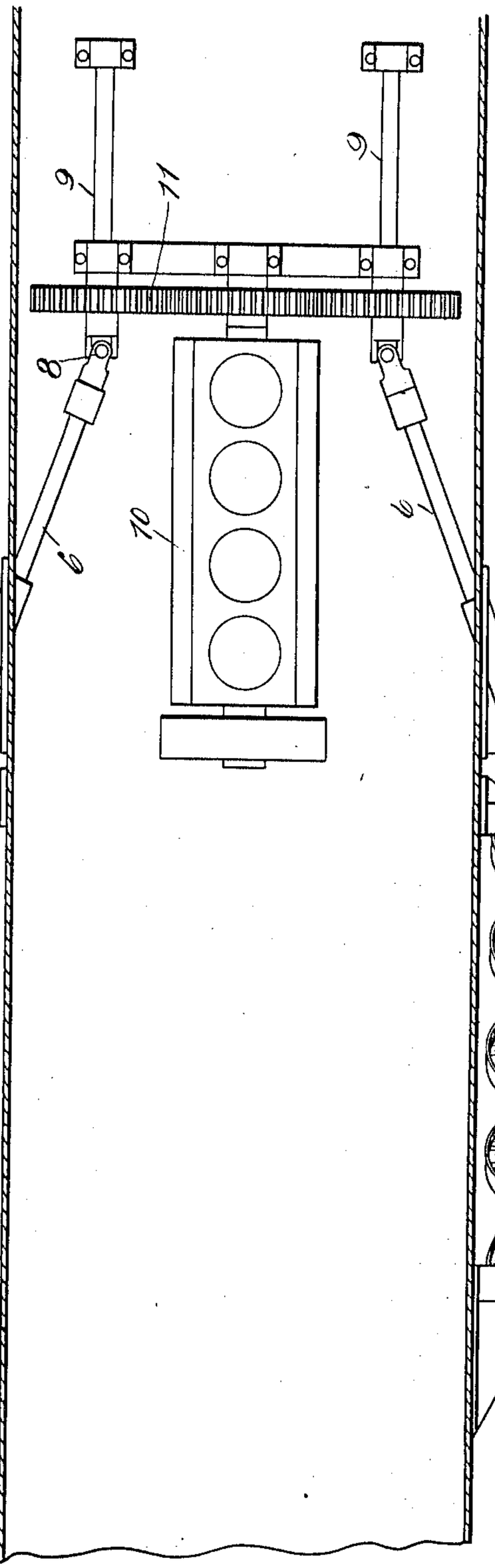

Fig. 1.

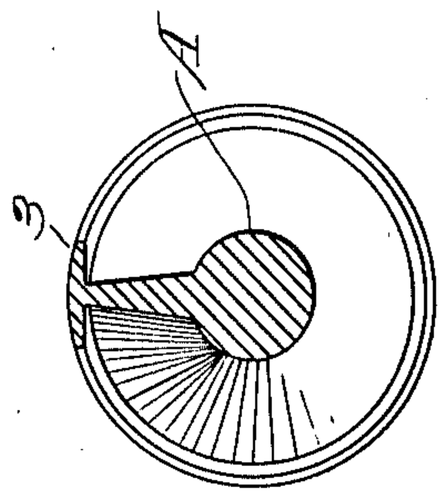

Fig. 2.

Witnesses,

F. E. Maynard.

C. Penfield

Inventor,
Wallace D. Haynes,
By Geo. K. Strong.
his Atty.

UNITED STATES PATENT OFFICE.

WALLACE D. HAYNES, OF OAKLAND, CALIFORNIA.

PROPELLER.

957,056. Specification of Letters Patent. Patented May 3, 1910.

Application filed September 1, 1909. Serial No. 515,717.

To all whom it may concern:

Be it known that I, WALLACE D. HAYNES, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Propellers, of which the following is a specification.

My invention relates to improvements in propelling mechanism for vessels.

It consists in the novel arrangement of spiral screws mounted parallel with the vessel's run, and means connecting said screws with the engine or motor within the vessel.

It also comprises details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a horizontal section showing the application of my invention. Fig. 2 is a transverse section showing the construction of the spiral blades.

It is the object of my invention to provide an efficient means for the propulsion of vessels by the application of power through the medium of spiral screw propellers journaled parallel with the run of the vessel, and upon opposite sides.

The propellers are in the form of spirally disposed blades having a number of turns about a central shaft A. The blades 2 have a wide peripheral rim 3 projecting upon each side, and overhanging the thickness of the blades, thus forming spiral channels around the shaft, so that when the shaft is revolved, the action of the spirals in the water would be to force the vessel ahead, and these overhanging flanges prevent the water being unduly thrown outwardly by centrifugal force; the confinement by these flanges assisting materially in the effective action of the propelling screws. These screws are preferably journaled upon each side of the vessel's run or bilge, just above the keel, and in such position as to be reasonably safe from injury from the outside.

The ends of the screw shafts A are journaled in suitable hangers or boxes as at 4—4ª. The rear box 4 may serve as a thrust bearing for the shaft which extends through the forward box 4ª, and is connected by a universal joint 5 with the driving-shafts 6. These shafts are carried through the sides of the vessel to connect with the engine or motor; and I have here shown them as passing through tubular sleeves 7, which sleeves pass through the sides of the vessel, and have water-tight joints at the points where they pass through. The shafts have suitable packing within the sleeves to prevent the ingress of water.

The inner ends of the shafts are connected by universal joints 8 with the shafts 9 through which power is transmitted to the shafts 6, and through them to the propellers exterior to the vessel.

The motor may be of any suitable construction. I have here illustrated a four-cylinder motor at 10, the crank shaft of which transmits power to the shafts 9, through gearing as shown at 11. By this construction the shafts 9 transmitting power through the shafts 6 to the propellers, are separated as far as possible toward the bilge of the vessel, and the angles of the shaft 6 are correspondingly reduced.

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

The combination with a vessel, of propellers journaled upon each side of the run or bilge of the vessel, said propellers being in the form of spirally disposed blades having a number of turns about a central shaft, said blades having a wide peripheral rim projecting upon each side so as to form spiral channels around the shaft, hangers fixedly secured to the outer sides of the vessel, the rear hangers serving as thrust bearings for the shafts of the propellers, said shafts extending through the forward hangers, tubular sleeves of substantial length passing through the sides of the vessel and forming water-tight joints at the point where they pass through, driving shafts passing through said sleeves, universal joints between the outer ends of the shafts and the propeller shafts, a motor, and gearing between the same and the driving shafts for operating the propellers.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WALLACE D. HAYNES.

Witnesses:

FRANK EMMONS,

JAWL STARK.