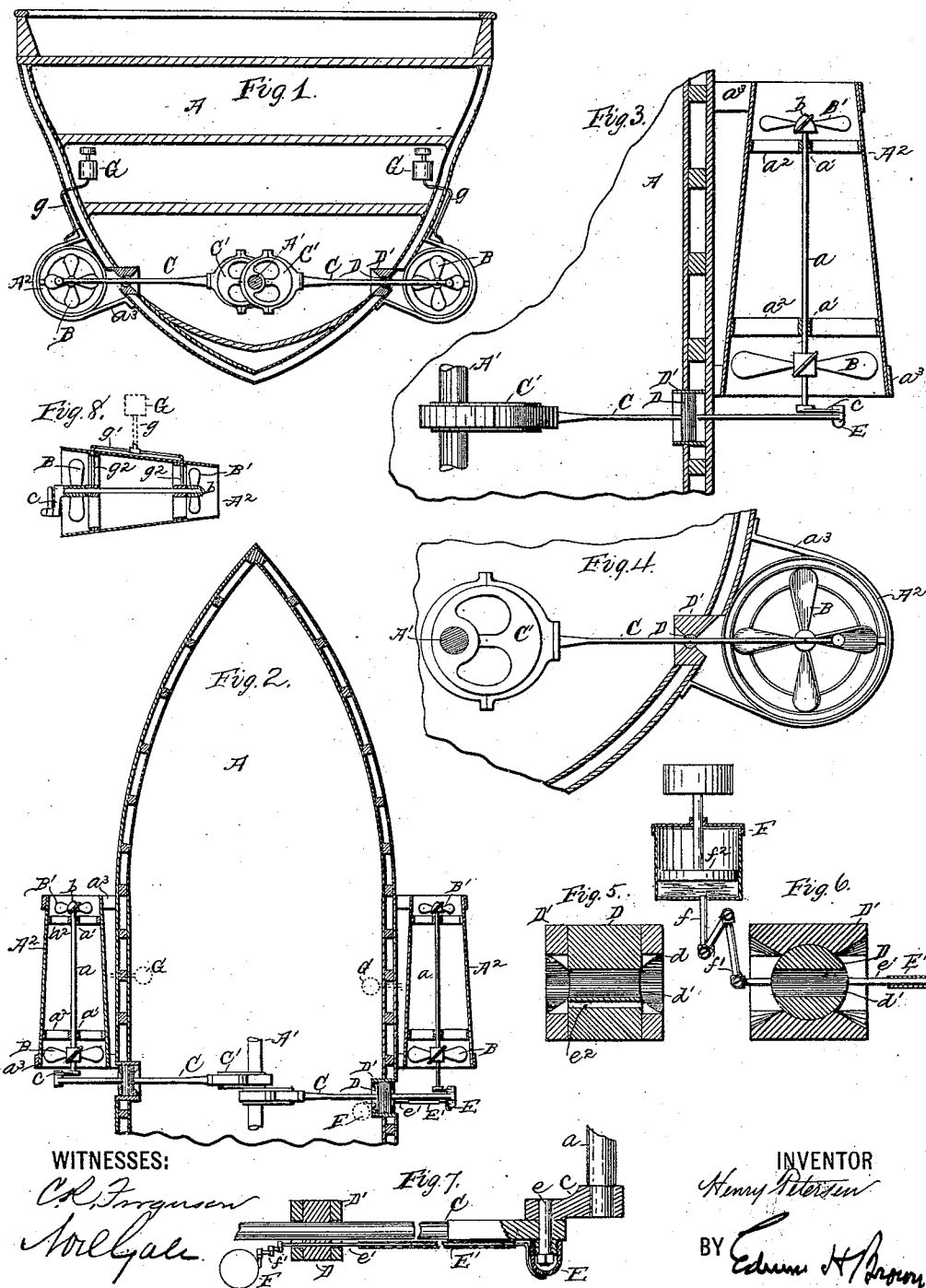


(No Model.)

H. PETERSEN.
PROPELLER.

No. 473,017.

Patented Apr. 19, 1892.



WITNESSES:

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HENRY PETERSEN, OF NEW YORK, N. Y.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 473,017, dated April 19, 1892.

Application filed July 16, 1891. Serial No. 399,693. (No model.)

To all whom it may concern:

Be it known that I, HENRY PETERSEN, of New York, county and State of New York, have invented a certain new and useful Improvement in Propellers for Vessels, of which the following is a specification.

This invention relates to propellers for steam or similar vessels; and it consists in propeller-wheels located at the side of the vessel and rotated from the main propeller-wheel shaft; and it further consists in means for lubricating the bearings.

I will describe a mechanism embodying my improvement, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a transverse vertical section of a vessel, showing my improvement. Fig. 2 is a top view of the propellers, showing the casings or tubes and a portion of the vessel in longitudinal section. Fig. 3 is an enlarged view, partly in section, of one of the propellers. Fig. 4 is an end view thereof. Fig. 5 is a horizontal section of a bearing employed. Fig. 6 is a transverse section of said bearing and certain lubricating mechanism. Fig. 7 is an enlarged detail partly in section. Fig. 8 is a partial vertical section showing lubricating mechanism for the propellers.

Referring by letter to the drawings, A designates the hull of a vessel, and A' shows a portion of a shaft rotated in the usual manner to revolve a propeller-wheel (not shown) at the stern of the vessel.

B B' designate pairs of propeller-wheels located at the outer sides of the hull A below the water-line and rotated from the main propeller-shaft A'. I have shown the propeller-wheels B B' of each pair as mounted on a shaft a , which has bearings a' in spiders a^2 , secured within a tubular casing A^2 , which is open at its ends. The bearing for the forward wheel is in the rear of the wheel. The forward propeller-wheel B' of each pair is preferably smaller in diameter than the rear wheel B, and the tubular casing A^2 has a taper, the smaller end being forward. By tapering the casing A^2 , as shown, it offers less resistance to the water. The casings A^2 may be secured to the sides of the vessel in any desired manner—such, for instance, as by

metal bands a^3 , surrounding the casings and bolted to the vessel. It will be seen that the forward end of the hub of the forward wheel B' is pointed, as at b , so as to offer a less resistance to the water. The propeller-wheels B B' at each side of the vessel are operated from the main shaft A' by means of eccentric-rods C, engaging with eccentrics C', mounted on the main shaft A', and engaging at the outer end with cranks c on the ends of the shafts a .

D designates oscillating bearings secured against longitudinal or vertical movement in the sides of the vessel for the passage of the eccentric-rods C. These bearings D are cylindrical in form and oscillate in bearing-blocks D', which are secured in openings in the sides of the vessel and have horizontal openings d through them. A rod C has a longitudinal movement through a transverse hole d' in its bearing D. It is obvious in this construction that when the rods C are in operation they will have a longitudinal movement through the bearings, and the oscillation of the bearings will accommodate them to the oscillating movements of the rods, and the bearings are water-tight.

As the different bearings cannot be reached for oiling in the usual manner, I have provided a means for automatically lubricating the bearings, which I will now describe.

I will first describe the crank-pin bearings. (Plainly shown in the enlarged view, Fig. 7.) The crank-pin e is secured to the crank c and passes through an opening in the eccentric-rod C, and an oil-box in the form of a cap E is removably engaged by a screw-thread or otherwise to a tubular boss extending from the side of the rod C, and through which the pin e also passes. A pipe E', secured to the rod C, communicates with the interior of the oil-box E. The pipe E' has a telescopic connection with a pipe e' , passing through and secured within an opening e^2 in the bearing D.

F is an oil-vat located within the vessel A and having a tube f , communicating through its bottom with the inner end of the pipe e' . As the tube f is stationary and the pipe e' has an oscillating movement with the bearing D, I connect the tube and pipe by means of movable joints f' . The oil-vat F is preferably

provided with a weighted piston f^2 , which by its downward movement forces the oil to the bearing.

I have shown the above-described lubricating mechanism as connected with the crank-pin of one pair only of the propeller-wheels; but it is to be understood that the other crank-pin is to be lubricated in the same manner.

As a means for lubricating the bearings a' for the shafts a , I provide the oil-vats G within the vessel, from which pipes g lead through the sides of the vessel to pipes g' , secured to the casings A^2 , as plainly shown in Fig. 8. From the pipes g' branch pipes g^2 lead to oil-holes in the bearings a' .

My invention not only serves to increase the speed of a vessel, but it obviates to a great extent the rocking motion often found in a propeller having only the stern wheel.

Having described my invention, what I claim is—

1. In a vessel, the combination, with a tubular casing secured to the side thereof, of propeller-wheels having bearings supported in said casing, means comprising an oil-vat within the vessel, having pipe connections with the wheel-bearings, for automatically lubricating the bearings, and means for rotating the wheels, substantially as specified.

2. In a vessel, the combination, with the main shaft, the propeller-wheels, and the eccentric-rods, of the bearings for said rods, consisting of the transversely-perforated cylindrical bearings D and the blocks D' , within which the bearings oscillate, substantially as specified.

3. The combination, with the oscillating bearing, the eccentric-rod, and the crank-pin, of the oil-box for said pin, a pipe communicating with the interior of said box, a pipe extended through the oscillating bearing and having a telescopic connection with the first-named pipe, and an oil-vat for supplying oil thereto, substantially as specified.

4. The combination, with a main shaft, a propeller-wheel, connections between the propeller-wheel and main shaft, and the oscillating bearing, of the pipe secured thereon, an oil-vat, a tube extending therefrom, and a joint connection between the tube and pipe, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY PETERSEN.

Witnesses:

ANTHONY GREF,
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