(No Model.)

T. P. C. HALSEY.

JURY SHAFT FOR PROPELLERS.

No. 455,964. Patented July 14, 1891.

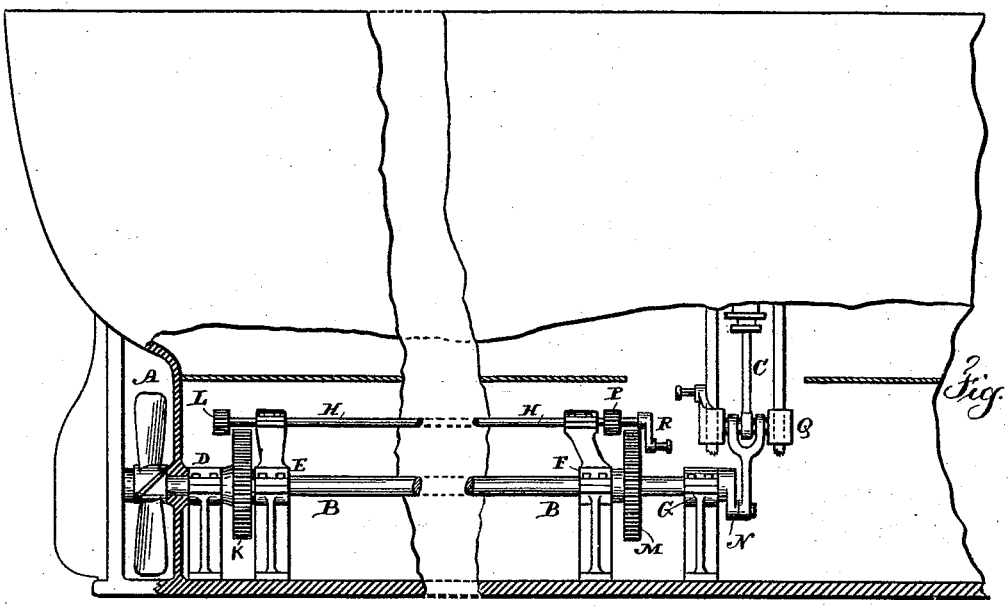

Fig. 1.

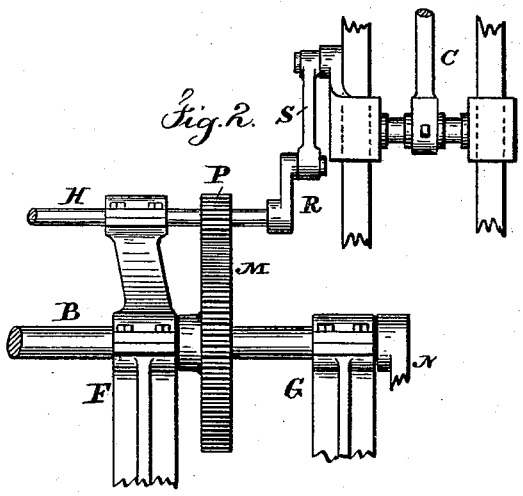

Fig. 2.

Witnesses
Chas. H. Smith
J. Staib

Inventor
Thomas P. C. Halsey
per Lemuel W. Serrell
atty

UNITED STATES PATENT OFFICE.

THOMAS P. C. HALSEY, OF JERSEY CITY, NEW JERSEY.

JURY-SHAFT FOR PROPELLERS.

SPECIFICATION forming part of Letters Patent No. 455,964, dated July 14, 1891.

Application filed January 6, 1891. Serial No. 376,865. (No model.)

To all whom it may concern:

Be it known that I, THOMAS P. C. HALSEY, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented a Jury-Shaft for Propellers, of which the following is a specification.

In sea-going vessels the long propeller-shaft extending from the engine to the propeller is subjected to very great strain and is liable to become broken, especially between the bearing that is adjacent to the propeller and the bearing that is adjacent to the engine, and there is little or no opportunity at sea to repair the broken shaft or to maintain the movement of the propeller sufficiently to cause the vessel to obey the helm.

My present invention is available for moving the propeller, after the shaft may have become broken, sufficiently for causing the vessel to obey the helm and to continue her course, but at a slower speed.

With this object in view I provide a shaft running parallel, or nearly so, with the propeller-shaft and of a smaller size and a gear-wheel and pinion, the wheel being connected with the propeller-shaft at a place where the shaft is not liable to be broken, such second or jury shaft being provided with movable connections to the engine, so as to be brought into action with facility after the connection to the main propeller-shaft has been severed.

In the drawings, Figure 1 is a longitudinal section of a portion of a vessel representing my improvement diagrammatically, and Fig. 2 is an elevation illustrating a connection that may be made from the engine to the jury-shaft.

The propeller A is of any desired character, and the shaft B of the same extends to the engine C. I have illustrated the engine as direct-acting, with the cylinder over the crank. The bearings for the propeller-shaft are to be placed in suitable positions. I have represented bearings at D E F G, and I have shown a jury-shaft H supported in suitable bearings and parallel to the shaft B, and this jury-shaft H will be much smaller than the propeller-shaft B in consequence of providing upon the propeller-shaft B a gear-wheel K of as large diameter as consistent with the space into which it is to be introduced, and a pinion L upon the shaft H of smaller diameter. Hence there is a leverage of the shaft H and pinion L in driving the propeller whenever the pinion L is in gear with the wheel K and the power is communicated through the shaft H. It is now to be understood that this pinion L can be slipped endwise upon the shaft H or with the shaft, so as to bring this pinion into action with the gear-wheel K whenever necessary so to do in consequence of breakage in the propeller-shaft B. The connections between the jury-shaft H and the engine C may vary according to the character of the engine.

I have represented a gear-wheel M upon the propeller-shaft B adjacent to the crank N and a pinion P upon the shaft H, that can be brought into gear with the wheel M when the jury-shaft H is employed. In this instance the relative sizes of the pinion P and wheel M should be adapted to running the engine at a slower speed than usual to lessen the risk of further injury. It will, however, be apparent that in case of breakage in the crank N or its pin or in case the propeller-shaft breaks at the crank N the wheel M will not be available, and in that instance it is preferable to provide upon the cross-head Q of the engine a wrist-pin and connecting-rod S to a crank R upon the jury-shaft H, so that such jury-shaft H may be revolved directly from the cross-head of the engine. The details of construction in these cases, however, will vary according to the character of the engine and the location of the respective parts.

I claim as my invention—

1. The combination, with the propeller-shaft and propeller, of the jury-shaft extending from near the propeller to the engine, parallel, or nearly so, with the propeller-shaft, and movable gearing for connecting the jury-shaft and the propeller-shaft, and a movable connection between the jury-shaft and the engine, substantially as set forth.

2. The combination, with the propeller-shaft and propeller, of a gear-wheel upon the propeller-shaft near the propeller, a jury-shaft extending from near the propeller to near the engine, a movable pinion to connect the jury-

shaft and the gear-wheel, and movable connections between the jury-shaft and the engine, substantially as set forth.

3. The combination, with the propeller-shaft and propeller, of a jury-shaft, a gear-wheel on the propeller-shaft near the propeller, and a gear-wheel near to and connected with the crank of the engine, and a movable pinion upon the jury-shaft to connect with such gear-wheel adjacent to the crank, substantially as set forth.

Signed by me this 30th day of December, 1890.

T. P. C. HALSEY.

Witnesses:
GEO. T. PINCKNEY,
HAROLD SERRELL.