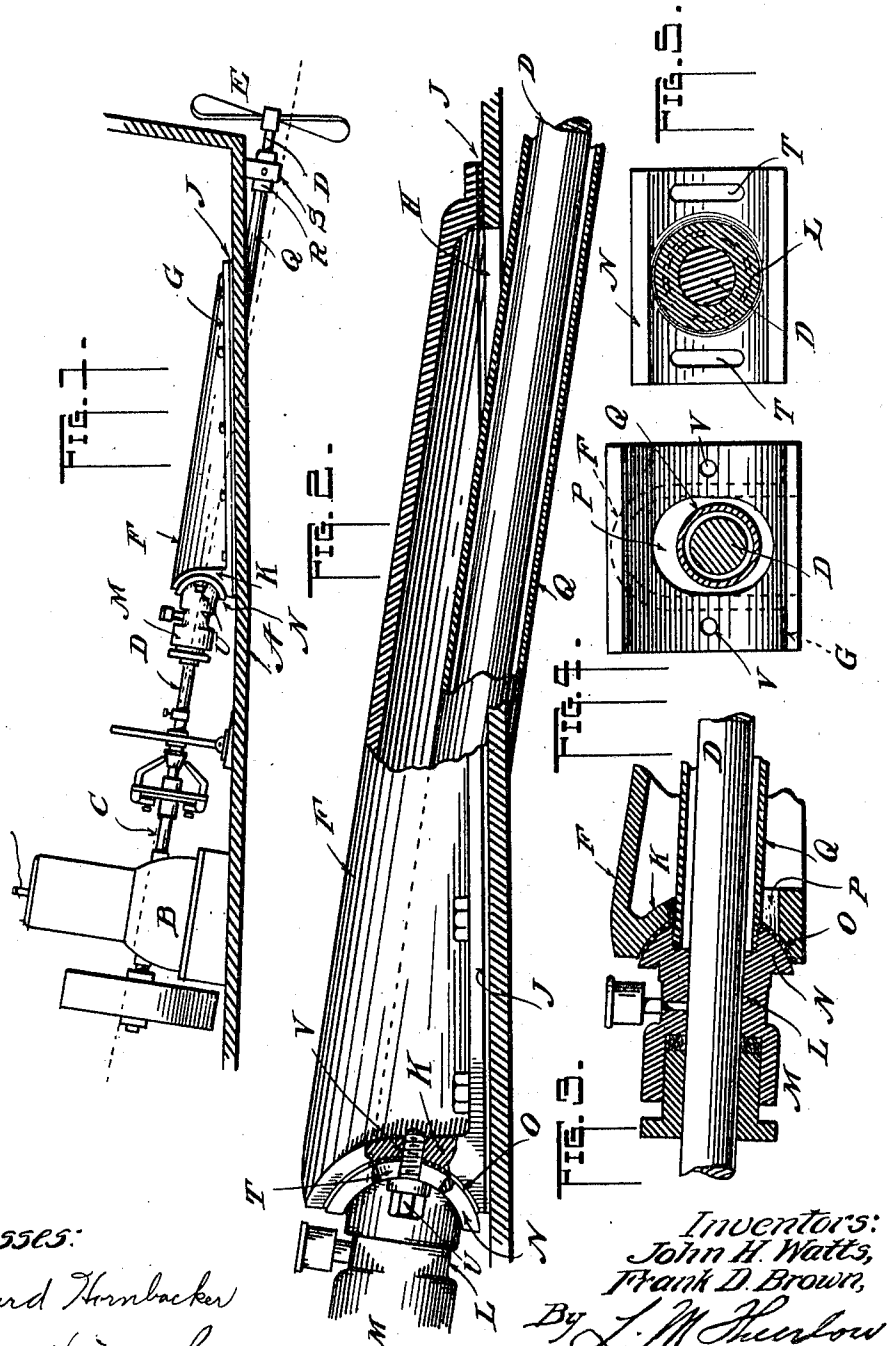
J. H. WATTS & F. D. BROWN.

SHAFT LOG.

APPLICATION FILED MAR. 17, 1917.

1,270,244. Patented June 18, 1918.



Witnesses:
Howard Hornbacker
Louise A. Masch.

Inventors:
John H. Watts,
Frank D. Brown,
By L. M. Thurlow
Atty.

UNITED STATES PATENT OFFICE.

JOHN H. WATTS AND FRANK D. BROWN, OF HAVANA, ILLINOIS, ASSIGNORS TO EZRA J. LIST, OF HAVANA, ILLINOIS.

SHAFT-LOG.

1,270,244. Specification of Letters Patent. **Patented June 18, 1918.**

Application filed March 17, 1917. Serial No. 155,592.

To all whom it may concern:

Be it known that JOHN H. WATTS and FRANK D. BROWN, citizens of the United States, residing at Havana, in the county of Mason and State of Illinois, have invented certain new and useful Improvements in Shaft-Logs; and they do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in that form of device secured in the bottom of a boat provided for receiving and housing the propeller shaft and known as a "shaft-log".

Various methods of carrying and housing said propeller shaft have been used but those of which we are aware are unsatisfactory, permitting little or no adjustments and preventing ready adjustability to the angle occupied by the engine and propeller shafts.

An object of our invention in view of the above is to construct a shaft-log which will practically adjust itself, or that can be adjusted to any angle of inclination the shafts may take in installing the engine.

Another object is to construct a metal shaft-log to tightly cover that portion of the boat having the usual opening through which the propeller shaft extends, the same including a part seated thereon in an absolutely water-tight manner and adapted for a wide range of adjustment and which also includes a bearing for said propeller shaft.

Another object is to provide a shaft-log of two parts having complementary curved surfaces, one to receive the other, one of said parts including a bearing for the propeller shaft, the adjustment of the two complementary parts relatively providing for any desired degree of inclination of the propeller shaft, all of which will be understood from the following specification, aided by the accompanying drawing, in which,

Figure 1 is a longitudinal section of a portion of the bottom of a boat, showing an engine and our invention mounted thereon.

Fig. 2 is a side elevation of our invention much enlarged, showing parts in section.

Fig. 3 is a longitudinal section of part of the invention shown in Fig. 2.

Fig. 4 is an end elevation of one of the parts showing a shaft and surrounding tube or pipe for the same in cross section; and,

Fig. 5 is a rear elevation of one of the other parts shown in Fig. 3, certain other parts being in section.

A indicates the bottom of a boat. B is indicative of an engine, C its shaft, D the propeller shaft, and E the propeller.

Our invention used in connection with the described parts includes, in combination, a hollow housing F provided with a marginal flange G which may be clamped upon the boat-bottom over the opening H in the latter through which the propeller shaft D extends, there being a gasket J of any suitable material beneath said flange to form a water-tight joint.

This housing is largest at its forward end and preferably tapers toward the rear, following the general direction of the shaft which it is to accommodate. Said forward end of the housing has a wall K whose outer or forward side is inwardly cylindrically curved to receive a correspondingly curved part N of a bearing L provided with any usual or approved type of stuffing-box M for the shaft D, there being interposed between the two curved surfaces a suitable gasket O. In addition, the wall K is provided with an opening P through which the propeller shaft extends, it being preferable to inclose the shaft in a pipe Q secured at one end in the curved extension N substantially as shown in Fig. 3.

Said pipe extends through the opening H in the bottom of the boat and may be threaded or otherwise held within a bearing R for the propeller shaft carried in a bracket S secured to and depending from the bottom of the boat.

T T represent two slots in the extension N one at each side of the opening P through each of which extends a set screw U engaging in threaded holes V in the wall K of the housing F.

The relation of the slots to the described parts is such that when the set screws are

loose the said bearing L for carrying the shaft D may be moved in a vertical plane so that the axis of its bore may be changed to accommodate the said shaft at any angle it may assume.

It is well known that each job of installing power plants in boats presents its difficulties in that no two are exactly alike, certain structural differences not apparent to the eye changing the whole system of precedure so that it is very difficult to properly install without loss of considerable time when the ordinary methods are employed, the final result being unsatisfactory. Herein lies the advantage of our invention. The engine shaft may assume any angle in a vertical plane and the parts of the shaft-log can be accommodated to it.

The housing F may be secured in position upon the boat-bottom and the set screws U left loose. The engine may then be set where desired at any height or angle so long as the axis of rotation of its shaft lies centrally of the boat and as long also that said axis passes through the point from which the cylindrically curved wall K of the housing is described. The set screws upon being tightened will secure the bearing at the proper angle. Or, the engine may first be set, its shaft and the propeller shaft placed in alinement; then the housing may be secured in position and in thus placing it, it will readily accommodate itself to the existing conditions. By leaving the set screws loose so that the bearing may turn relatively to the housing, the flange G can be secured to the boat and all firmly secured in a comparatively short time and a first class workman-like job is the result.

The broken line, in Fig. 1, indicates one of a number of angles, the engine shaft and the propeller shaft may occupy, it being observed that the axes of the shafts must always extend through the point from which the said curved wall K is described.

The office of the pipe Q is to cover the propeller shaft so that neither moss nor weeds will wrap upon the shaft and stall the engine. This, however, may or may not be used, according to desire.

If desired the relation of the curved surfaces of the parts K and N may be reserved. That is to say, the part N may be recessed and the part K outwardly curved, or other forms may be used equivalent thereto, but this all lies within the meaning of our invention.

Our device has the advantage that the part including the bearing N can be permanently secured to the housing F and therefore after the shaft has been properly alined it is more firmly held than by the structures of which we are familiar. But more important is the fact that in installing the mechanism the shaft D having been placed in the bearing can be lined up with the predetermined position for the axes of rotation of the propeller and engine-shaft after which, by tightening the set screws U or their equivalents, the shaft is maintained stationary while the bearing S and the engine shaft are being lined up with it.

The curved wall of the housing F in being cylindrically curved by describing said curve from an axis lying perpendicular to a vertical plane lying parallel to the axis of the shaft, will permit the said shaft to move only in a vertical plane, and no side strains can be imposed upon said shaft to bind it in its bearings.

Having thus described our invention, we claim:

1. In combination with a propeller shaft, a shaft log permanently mounted through which the shaft extends, said log having a cylindrically curved end wall forming a recess, the curve of the said wall being described by rotating a line about an axis lying perpendicular to a vertical plane, itself lying parallel to the axis of rotation of said shaft, a bearing for the shaft having a surface complementary to the said curved wall and seated upon said wall, and means to secure the bearing and log in fixed relation.

2. A shaft-log including in its construction a part to be secured upon the bottom of a boat, a part adjustable relatively thereto, one of said parts having a curved surface, the other having a surface formed complementary thereto and adapted to seat thereon, and means engaging those portions of said parts having said surfaces for securing the said parts in connected relation.

3. A shaft-log including in its construction, a part to be secured rigidly to and upon the bottom of and inside a boat, a part adjustably mountd on the same including a shaft bearing, and a tubular member secured at one end in the second named part concentrically to the axis of the bore of said bearing and extending through the said bottom of the boat.

4. In combination, a housing secured to the bottom of a boat and open at one end, the said open end having a curved surface regular in form, a part having a curved surface complementary thereto seated upon said open end and including a bearing, a propeller shaft carried in the bearing and extending through the housing, means directly engaging both the described portions for securing them together, and a tubular member secured in the said part and extending inward through said housing and inclosing said shaft.

5. A shaft-log including in its construction a part to be secured upon the bottom of a boat having a cylindrically curved surface, a part having a surface complementary thereto, one of the said parts being slotted,

and a member extending through the slot and adjustable in the other part adapted to secure both parts in rigid relation.

6. A shaft-log including in its construction a part to be secured upon the bottom of a boat having a cylindrically curved surface, a part having a surface formed complementary thereto, a shaft bearing carried by the second named part, one of said parts being slotted, and a member extending through the slot and adjustable in the other part adapted to secure both parts in rigid relation.

7. A shaft-log including in its construction a part to be secured upon the bottom of a boat having a cylindrically curved surface, a part having a surface formed complementary thereto, a gasket interposed between the two surfaces, a shaft bearing carried by the second named part, one of said parts being slotted, and a member extending through the slot and adjustable in the other part adapted to secure both parts in rigid relation.

8. As an article of manufacture, a part having an open lower side to be secured upon the bottom of a boat, said part having a cylindrically curved wall at one end, there being an opening in said wall, a second part also having a curved wall complementary to the first and seated thereon including a shaft bearing, the said second part being adjustable relatively to the first, means mounted on the parts to secure them relatively, and a tubular member secured in the said second part and extending through the described opening and through the first named part and its open lower side.

9. As an article of manufacture, a long hollow tapering member open along one side, and including an end wall having an opening communicating with the cavity of the member, said end presenting a broad cylindrically curved surface, a part having a curved surface complementary to the first and including a bearing for a shaft, and clamping means engaging both the described portions for clamping them rigidly together.

10. As an article of manufacture, a long hollow tapering member open along one side, and including an end wall having an opening communicating with the cavity of the member, said end presenting a broad cylindrically curved surface, a part having a curved surface complementary to the first and including a bearing for a shaft, clamping means engaging both the described portions for clamping them rigidly together, and a tubular member secured in said part, the same extending through the described opening of said end wall into the tapering member and through its open side.

In testimony whereof we affix our signatures, in presence of two witnesses.

JOHN H. WATTS.
FRANK D. BROWN.

Witnesses:
WM. F. RYAN,
H. G. STRUMPFER.

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