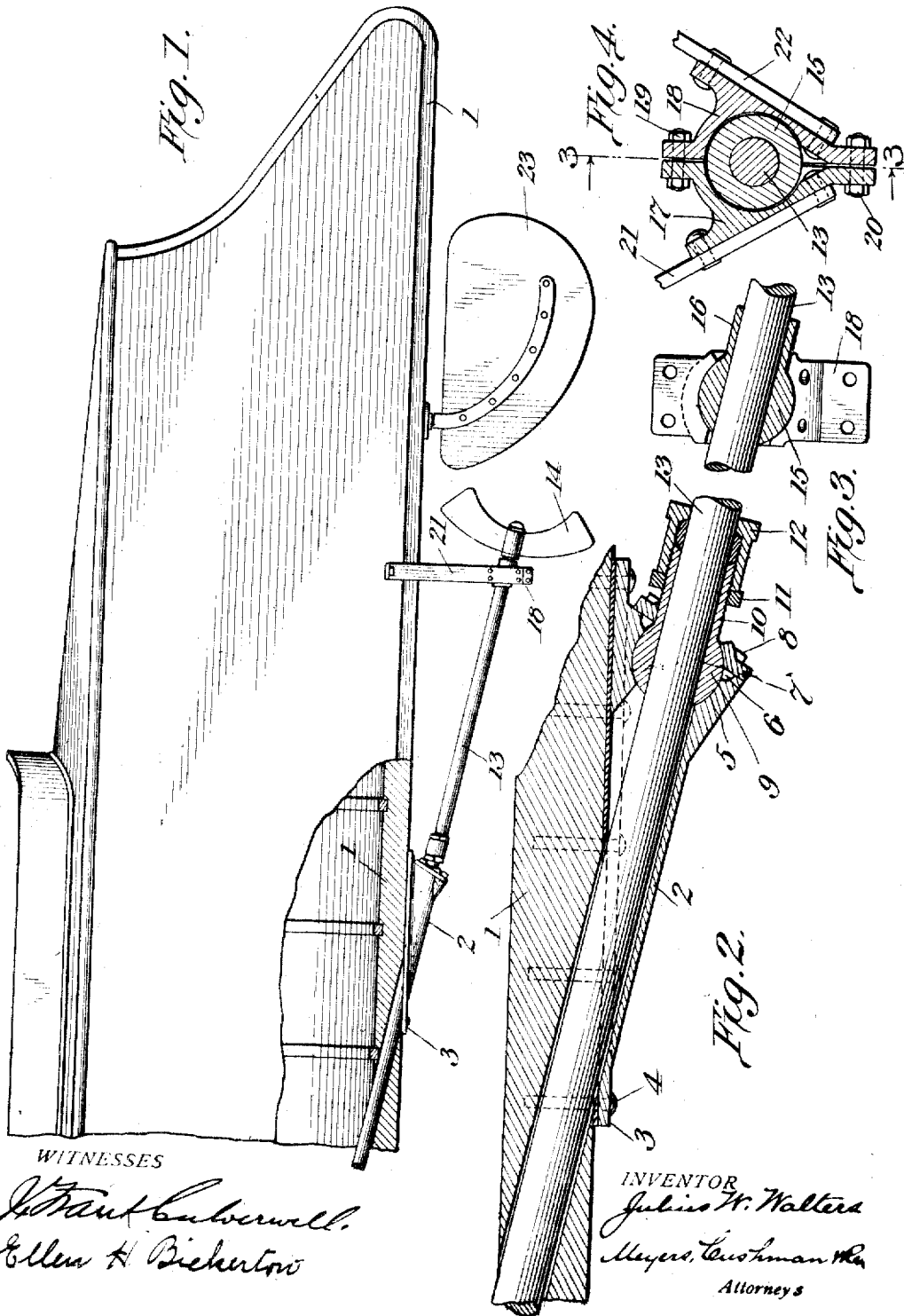


J. W. WALTERS.
 PROPELLER SHAFT HANGER AND BEARING.
 APPLICATION FILED JULY 13, 1908.

947,265.

Patented Jan. 25, 1910.



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UNITED STATES PATENT OFFICE.

JULIUS WM. WALTERS, OF GLENS FALLS, NEW YORK, ASSIGNOR TO MECHANICAL DEVICES COMPANY, OF ALBANY, NEW YORK. A CORPORATION OF NEW YORK.

PROPELLER-SHAFT HANGER AND BEARING.

947,265.

Specification of Letters Patent.

Patented Jan. 25, 1910.

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To all whom it may concern:

Be it known that I, JULIUS W. WALTERS, a citizen of the United States, residing at Glens Falls, in the county of Warren and State of New York, have invented new and useful Improvements in Propeller-Shaft Hangers and Bearings, of which the following is a specification.

My invention relates to shaft hangers and bearings, and more particularly, to hangers for use in connection with the propeller shafts of boats.

Where a propeller shaft passes through the bottom of a boat it is common to provide a sleeve or stuffing box in which the shaft is journaled, and also a hanger secured to the bottom of the boat, and serving to support the extended end of the shaft adjacent the propeller. With the construction heretofore employed, however, great difficulty has been experienced in securing a proper alinement of the two bearings with the shaft, and with each other. In order to even approximate this result has required a great deal of accurate adjustment. But perfect alinement is seldom attained, and as a result the bearings bind more or less upon the shaft, and not only cause wearing of the parts, but, by reason of the excessive friction, very materially reduce the effective power of the motor.

The primary object of the present invention is, therefore to overcome this objection by providing the stuffing box and hanger with bearings which are universally movable, and self-alining, and which therefore will readily and freely adjust themselves to the proper angle.

With the above, and other objects in view upon the details of such devices, my invention consists in the construction and arrangement of the parts hereinafter described, and illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the stern of a boat having my invention applied thereto, parts being broken away for the sake of clearness. Fig. 2 is a longitudinal section on an enlarged scale showing my improved stuffing box. Fig. 3 is a central longitudinal section through the bearing of my improved shaft hanger, and Fig. 4 is a transverse section thereof.

Referring to the drawings in detail 1 represents the keel of a boat which may be of any power driven type.

13 designates the propeller shaft which passes up through the keel of the boat.

In order to form a bearing for the propeller shaft I provide a housing 2, having a flange 3, adapted to be secured to the bottom of the boat by means of suitable fastening devices 4. This housing has an inclined passage extending therethrough, and near its rear end is provided with a spherical seat or socket 5. This seat is surrounded by an annular groove 6 adapted to receive suitable packing material, which is held in place by means of a cap or cover 7, secured to the housing, as by means of screws or bolts 8. Within the socket 5 and adapted to have a turning movement therein, is a ball 9, having a sleeve 10 extending rearwardly therefrom, and preferably formed integral therewith. Through the sleeve and ball is formed an opening of such a bore as to receive and snugly fit the propeller shaft. A stop ring 11 encircles the sleeve 10 and a cap or gasket screws over the sleeve 10 and abuts the stop ring 11. Suitable packing is placed between the cap and sleeve. By the above construction it will be apparent that the propeller shaft may be inserted in the bearing formed by the ball and sleeve, and then angularly adjusted in any direction so as to bring it into the desired alinement with the motor bearings, and thus prevent the binding of the shaft.

In order to support the shaft 13 adjacent the propeller 14 I provide an improved form of hanger, as shown in detail in Figs. 3 and 4. The bearings for this hanger are composed of a ball 15 preferably having a sleeve 16 extending therefrom, and provided with an opening adapted to receive and support the shaft. The ball 15 is seated in a spherical socket formed in two adjacent similar members 17, 18, which, as shown in Fig. 4, are preferably triangular in shape, and are secured together at the top and bottom by means of bolts 19, 20, extending through flanges thereon.

To enable this ball bearing hanger to be given a variation to depth to suit various propeller diameters, I provide supporting struts 21 22, the lower ends of which are adapted to be riveted to the triangular socket forming members 17, 18, as clearly

shown in Fig. 4. These struts are manufactured independent of the hanger, and are furnished long enough to care for the largest propeller made; they may, therefore, be cut off by the purchaser to suit the requirements of his particular boat, and then drilled, and riveted to the hanger.

It will be apparent that the ball and sleeve 15, 16 will readily adjust itself to any required angular position, and consequently be prevented from binding upon the shaft 13, no matter what position it may assume. It will also be observed that by providing both the stuffing box and hanger with ball and socket bearings, the two may be adjusted into perfect alignment with each other and with the motor bearings; in this way all possibility of excessive friction and undue wear of the parts is avoided.

Another important feature of the invention is the fact that the ball 15 within the hanger can be readily replaced when worn. This is accomplished by simply unscrewing bolts 19 and 20, slipping the worn bearing out of the hanger members, and inserting a new one in its place.

It will thus be seen that I have provided an improved bearing and hanger for propeller shafts which renders possible the perfect alignment of the several parts, and insures free operation of the motor, and it is thought that the numerous advantages of my invention will be readily appreciated by those skilled in the art.

What I claim is:—

1. In combination with a boat, a shaft housing attached to the keel thereof and provided at its outer end with a semispherical socket member, a ball retaining cap plate secured upon the outer end of said socket member, a universally movable ball member seated in the socket member of said housing, a stuffing box at the outer end of said ball member, a shaft hanger fixed to the bottom of the boat at a distance from said housing a ball and socket bearing supported by said hanger, and a propeller shaft carried by said ball and socket bearings, so as to have a two point universally movable suspension.

2. A hanger for propeller shafts comprising a pair of similar members suitably se-

cured together and having a spherical socket formed therein, a ball seated in said socket and provided with an opening adapted to serve as a bearing for the shaft, and a strut attached to each of said members and secured to the bottom of the boat.

3. A hanger for propeller shafts comprising a pair of similar members each having a concave seat, said seats, when fitted together, constituting a spherical socket, and a ball mounted in said socket and having an opening adapted to receive the shaft, said socket forming members being of triangular shape and bolted together along one side, and struts attached to another side of said members and serving to support the same from the bottom of the boat.

4. A hanger for propeller shafts comprising a pair of similar members each provided with a concave seat, said seats, when fitted together, constituting a spherical socket, a ball mounted in said socket and having an opening adapted to receive the shaft, and a pair of independent and separately formed struts serving to support said hanger and adapted to be cut to any desired length and riveted to the socket forming members.

5. A hanger for propeller shafts comprising a pair of socket members disposed on opposite sides of said shaft, and forming together a ball socket, and a ball mounted in said socket for universal movement and having a shaft opening therethrough.

6. A hanger for propeller shafts comprising a pair of socket members disposed on opposite sides of said shaft and forming together a ball socket, bolt receiving lugs on said members to connect them, strut receiving faces and strut securing lugs on said members, a ball member mounted in said spherical socket and having a shaft opening therethrough, and supporting struts secured to said socket members.

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

JULIUS WM. WALTERS.

Witnesses:

WALTER A. CHAMBERS,
HERMAN METZNER.