J. W. WALTERS.

SHAFT HANGER.

APPLICATION FILED APR. 13, 1911. RENEWED DEC. 14, 1912.

1,067,892.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

Fig 1

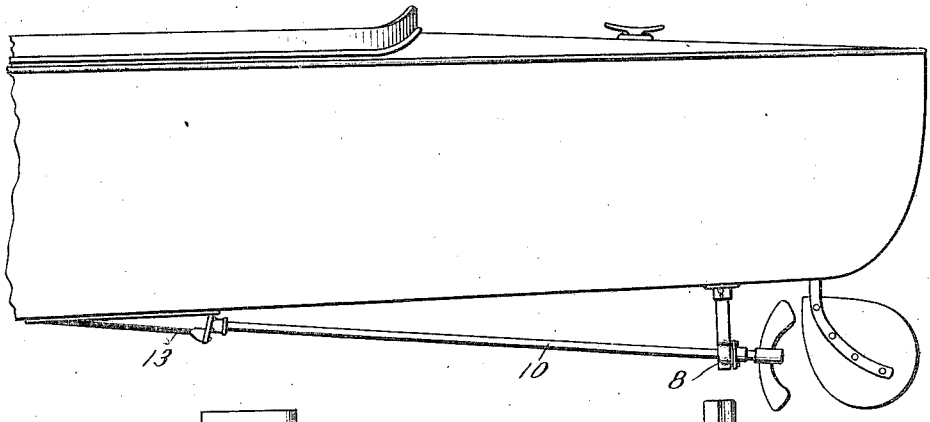



Fig 2

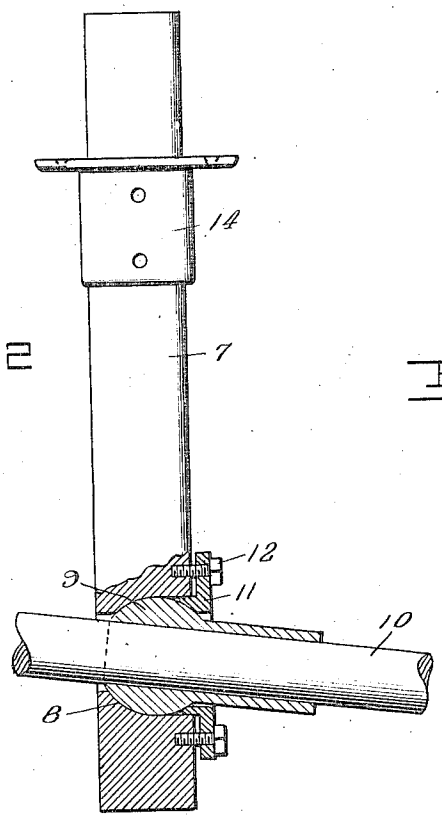
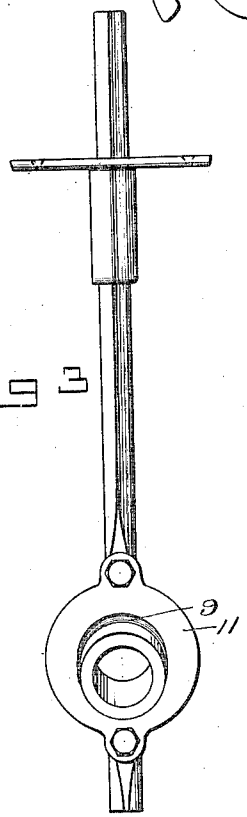



Fig 3




Witnesses

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2 SHEETS—SHEET 2.

Fig 4

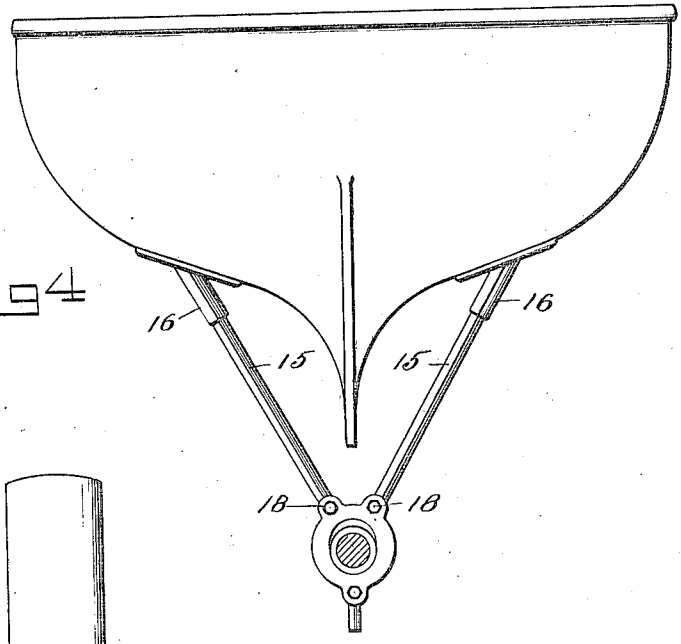



Fig 5

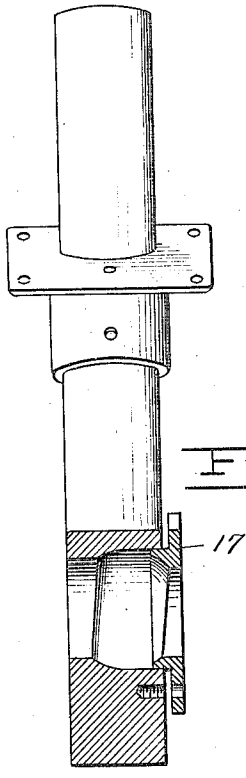
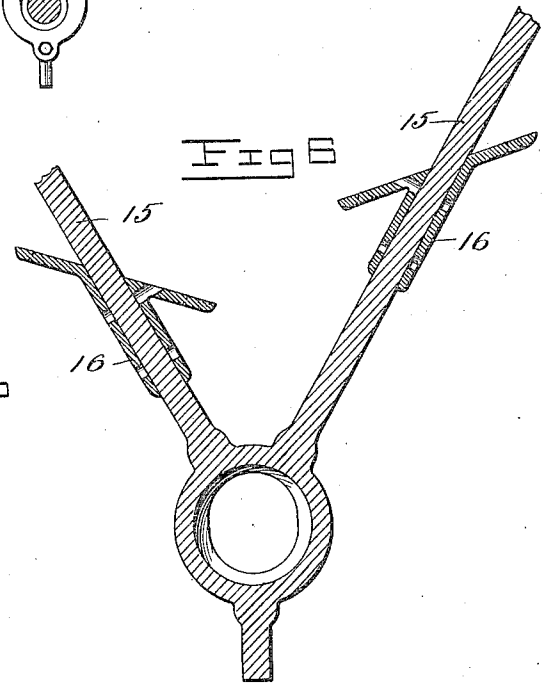



Fig 6




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# UNITED STATES PATENT OFFICE.

JULIUS W. WALTERS, OF GLENS FALLS, NEW YORK, ASSIGNOR TO MECHANICAL DEVICES CO., INCORPORATED, OF WATERVLIET, NEW YORK, A CORPORATION OF NEW YORK.

## SHAFT-HANGER.

1,067,892. Specification of Letters Patent. Patented July 22, 1913.

Application filed April 13, 1911, Serial No. 620,954. Renewed December 14, 1912. Serial No. 736,825.

*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 Shaft-Hangers, of which the following is a specification.

The present invention relates to shaft hangers, and in its present embodiment is shown as applied to boats of small type, or, as they are popularly known, "motor boats."

It has for its object to provide a hanger for the tail end of the propeller shaft which is self-alining, so that any slight inaccuracies in alinement between the keel shaft housing and the hanger will be taken care of; which may be adjustably fitted to craft of different drafts; which will afford a firm support for the shaft; and which may be produced at a small cost and which, furthermore, is not likely to become deranged in use or be costly to maintain.

In order that the invention may be understood by those skilled in the art, I have shown in the accompanying drawings one embodiment of my invention, which illustrated disclosure it will be understood is in no sense restrictive of my invention, as it is obvious that various mechanical changes and expedients may be resorted to in practising my invention without departing from the same.

In the drawings,—Figure 1 is a view in side elevation of a portion of a motor boat with my hanger mounted thereon. Fig. 2 is a view in side elevation of the hanger, the bearing proper being shown in section. Fig. 3 is an end view of the hanger looking from the right in Fig. 2. Fig. 4 is a rear view of a motor boat showing a double strut hanger as a variation of the single strut hanger shown in the preceding figures. Fig. 5 is a sectional view from the side showing one of the struts in elevation and the shaft bearing proper in section. Fig. 6 is a transverse, sectional view of the double strut hanger to show the relation of the bearing and struts and the adjustable body plates for securing the hanger in place.

Referring to the drawing by numbers, like numbers indicating like parts in the several views, and taking up first Figs. 1, 2 and 3, it will be seen that in this form of my invention the hanger comprises a single strut 7 of any desired shape in cross section having at its lower end a bearing socket 8 formed in the material of the strut and of sufficient size to receive a sleeved ball 9 through which the propeller shaft 10 passes and in which it rotates. This shaft bearing 9 has a universal movement in the socket 8 so as to adjust itself to any angle within wide limits which the shaft 10 may take. The socket 8 in the hanger 7 is, of course, of a contour complementary to the contour of the bearing 9, the socket 8 opening at one side of the strut, preferably the rear side, the full diameter of the socket so as to permit the insertion of the bearing 9, a socket-plate 11 being provided which is secured by suitable screw bolts 12 to the strut so as to form an inclosed housing and seat for the bearing 9, the socket 8 opening through the strut in the other direction to provide a passage for the shaft. With this construction it will be obvious that when the parts are assembled the shaft 10 will be supported by the bearing 9 in such a manner as that the bearing will take its position automatically in the strut socket and correct any slight inaccuracies in alinement of the shaft without the necessity of fine adjustment, so that the shaft 10 supported at the keel housing 13 and the strut bearing 8 will automatically aline itself and overcome any small inaccuracies which may be present. In order that the strut may be adaptable to various craft and different depths of propeller, I provide it with an adjustable fastening 14 comprising a sleeve portion which engages the strut 7 and is perforated to receive securing pins, this sleeve portion being surmounted by a keel plate which may be readily fitted to the bottom of the boat and provided with screw holes through which the securing screws may be passed. With this construction a great variety of conditions may be met, for by making the strut 7 of maximum length, it will be obvious that when it is placed it may be cut down, if necessary, to whatever length is desired; the keel plate 14 may then be pinned to the end of the strut 7, after which the keel plate and its suspended strut may be screwed to the bottom of the boat, and in this position be ready to receive the tail of the propeller shaft.

In order that greater rigidly may be given to this suspended shaft bearing, it may be advisable to adopt the variation shown in

Figs. 4, 5 and 6, in which the strut is divided and two arms 15 are projected from the socket portion at the desired angle, each of these arms carrying a keel plate 16 which, as shown in Fig. 6, may be adjusted to any suitable or desired height to meet conditions, the sleeve portions and the plate portions of these keel plates being arranged as shown in order to accommodate the inclined position of the struts 15. In this form of double strut the socket plate 17 is preferably provided at its upper side with two securing ears so as to accommodate a screw bolt 18 for each strut, as best shown in Fig. 4. The application of the double strut hanger is similar to that described in connection with the single strut device. The depth of the hanger being determined the struts 15 will be cut to the proper length, the hanger will be centered and the keel plates 16 pinned to the ends of the struts will then be secured to the bottom, and the propeller shaft may then be shipped and will automatically aline itself as hereinbefore stated.

It will be seen that hangers constructed in accordance with my invention may be very economically produced, as they may be cast in a single piece and then machined to provide the bearing portions. The matter of assembling and fitting them is simple and does not require an expert mechanic, and the structure is such that alining of the propeller shaft is a simple matter for the obvious reason that within wide limits the shaft becomes self-alining and will take its proper mounting when once set in place and maintain it. It will be observed that the matter of maintenance in workable condition is satisfactorily looked after for the reason that any wear in the bearing is readily cared for by setting up the socket plate 11 (see Fig. 2) by means of the screw bolts, so that looseness or play of the parts may be easily compensated for.

While I have shown a particular embodiment of my invention, and that the best now known to me, I do not limit myself to the details of construction except so far as I am limited by the terms of the appended claims.

I claim:—

1. A shaft hanger strut comprising a one-piece elongated body portion enlarged at one end, the enlarged end being hollowed out to provide a spherical chamber, one side of the enlarged end having a reduced opening leading to the chamber and the opposite side of the enlarged end having an opening of the diameter of the chamber and leading directly thereinto, a universally adjustable shaft-bearing sleeve fitting in the chamber, a sleeve-securing plate engaging about the shaft-bearing sleeve and fitting in the opening of the diameter of the spherical chamber, and means for retaining the plate against the enlarged end of the strut.

2. A shaft-hanger comprising a strut having at its lower end a shaft-bearing, and a keel-plate adjustable on said strut.

3. A shaft-hanger comprising a strut having at its lower end a shaft-bearing, and a keel-plate slidingly mounted on said strut and adapted to be secured thereto in any adjusted position.

4. A shaft hanger comprising a strut having at its lower end a bearing-socket, a universally-adjustable shaft-bearing in said socket, a complementary socket-plate adapted to engage said shaft-bearing and secure it in place, and means for securing said socket-plate.

5. A shaft-hanger comprising a strut having at its lower end a bearing-socket, a plate fitted in said socket and adapted to form therewith a seat, and a universally-adjustable shaft-bearing mounted in said seat.

6. A shaft hanger comprising a strut having at its lower end a bearing-socket, a universally-adjustable shaft-bearing in said socket, and a keel-plate adjustable on said strut and comprising a strut-engaging sleeve having at its upper end a web to engage and be fastened to the keel.

7. A shaft-hanger comprising a strut having an integral bearing-socket provided with a receiving-mouth opening at one side of the strut and being of the full diameter of the socket, a universally adjustable shaft-bearing sleeve in said socket, a sleeve-securing plate located against the side of the strut and having an opening receiving one end of the sleeve therethrough and being provided with an inturned marginal edge projecting into the receiving-mouth of the socket to retain the sleeve therein, and retaining screws engaging through the plate and into the strut for adjustably holding the plate against the sleeve.

8. A shaft-hanger comprising a strut having an integral bearing-socket opening through one side of the strut, the opening being of the full diameter of the socket, a universally adjustable sleeve engaging in the socket, a plate engaging about the sleeve and against the strut and having a projecting portion engaging into the socket, and supporting screws for the plate to adjustably hold the same against the strut.

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

JULIUS W. WALTERS.

Witnesses:
WM. W. HORTON,
CHARLES J. PFAU.