Aug. 2, 1932. I. W. MASTERS 1,869,974

SPEED INDICATING MEANS

Filed Oct. 11, 1929

Fig. 1.

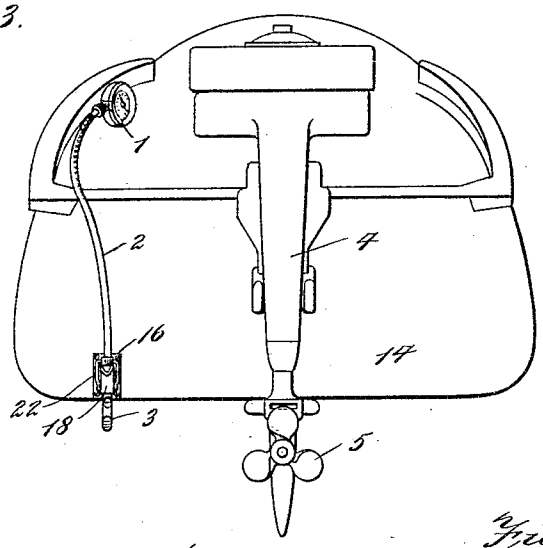


Fig. 3.

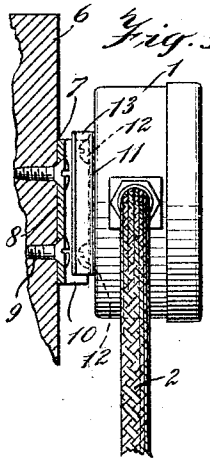


Fig. 5.

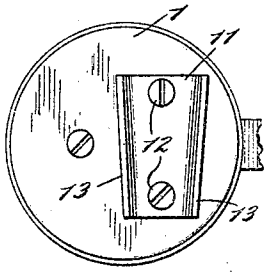


Fig. 2.

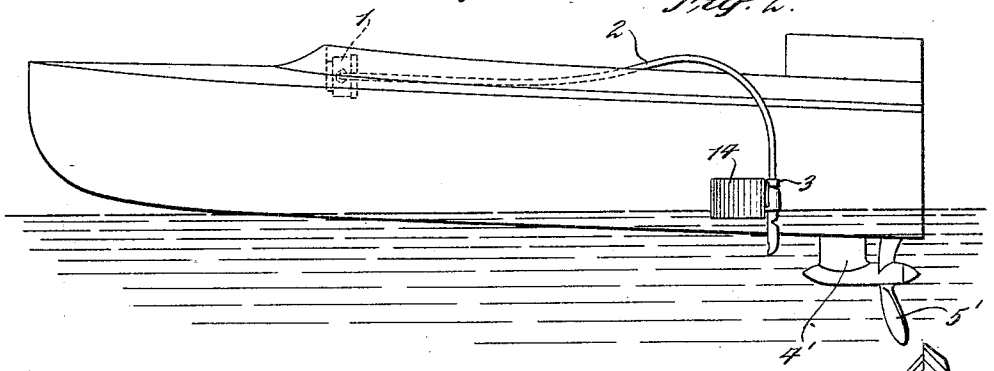


Fig. 6.

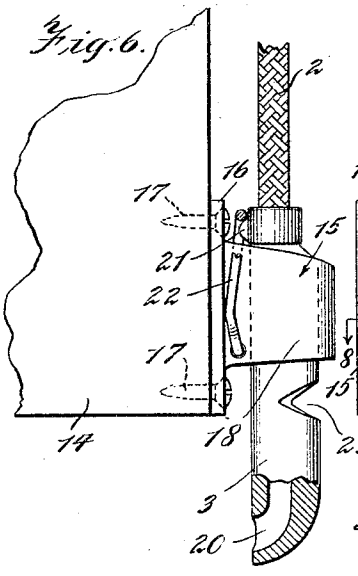


Fig. 7.

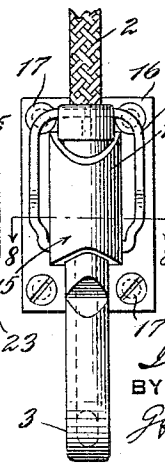


Fig. 8.

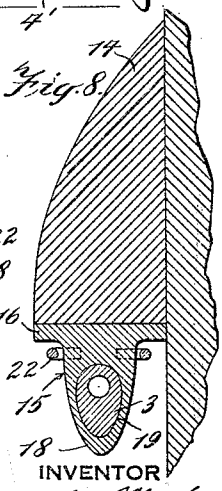
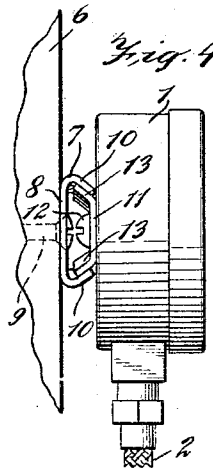


Fig. 4.



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Patented Aug. 2, 1932 1,869,974

UNITED STATES PATENT OFFICE

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SPEED INDICATING MEANS

Application filed October 11, 1929. Serial No. 398,874.

This invention relates to a novel and improved speed indicating means, particularly adapted for use with small boats, such as outboard motor boats, and the novel features of the invention will be best understood from the following description and the annexed drawing, in which I have shown a selected embodiment of the invention and in which;

Fig. 1 is a rear view of an outboard motor boat having my invention applied thereto.

Fig. 2 is a side elevation of a boat having the motor arranged in a slightly different position, and showing the different locations of the impact tube.

Fig. 3 is a vertical view, partly in section and partly in elevation, showing the means for detachably holding the indicator in position on the boat.

Fig. 4 is a plan view of the structure appearing in Fig. 3.

Fig. 5 is a rear view of the speed indicator.

Fig. 6 is a fragmentary view on an enlarged scale showing the means for holding in place the impact tube, as it appears in Fig. 2.

Fig. 7 is a view taken from the right of Fig. 6.

Fig. 8 is a section on the line 8—8 of Fig. 7.

The invention comprises a speed indicator 1 adapted to be operated by pressure transmitted thereto, the amount of pressure varying with the speed of the boat. This type of indicator is well-known, and no further description thereof is deemed necessary. The indicator is arranged in a suitable place on a boat, such that it may be conveniently seen by the operator.

Secured to the indicator is a flexible tube 2, which may be in the form of a metallic hose of known construction. This hose extends towards the rear of the boat and, in Fig. 1, is shown as extending over the stern where its rear end is secured to the impact tube 3. In Fig. 4, the hose extends towards the rear and then over the side of the boat, the impact tube being secured in place on the side. The choice of the location for the impact tube will depend largely upon the location of the motor and propeller for operating the boat. In any case it extends below the load line of the boat, as shown, and the hose extends over an edge of the boat, either on the side or at the stern.

In Fig. 1, the numeral 4 indicates an outboard motor adapted to operate the propeller 5, this motor and propeller being mounted on the stern in any well-known manner, while in Fig. 2 is shown a motor 4′ with a propeller 5′ mounted in a well within the confines of the boat, and with this location of motor it is considered preferably to mount the impact tube on the side of the boat where it will not be subjected to the action of the water disturbed by the propeller.

According to my invention, the complete unit, consisting of indicator, impact tube, and connection therebetween, is so constructed and so secured to the boat that it may be readily taken off and replaced. This is of particular value with light boats used by amateurs, and which it is sometimes necessary to leave in exposed positions. It is desirable under such conditions, to remove fixtures of value, to protect them. Moreover, according to my invention the entire unit may be removed with a minimum of trouble, and it is so constructed that it must be replaced in the correct position on the boat.

Referring now to Figs. 3, 4 and 5, in which are shown the means for securing the indicator to the boat, a portion of the boat hull is indicated at 6 and secured to this boat is a wedge-shaped socket 7 having a back 8 in contact with the boat and secured thereto as by screws 9. This back has at opposite sides inwardly extending wings 10, the inner edges of which are closer together than the portions adjacent the back, and these wings are also closer together at the bottom of the socket than they are at the top, so as to form the wedge shape referred to above.

On the back of the indicator, as shown in Fig. 5, is a corresponding wedge 11 attached to the indicator as by screws 12. The wedge 11 is provided with outwardly flared wings 13, which are so shaped as to engage the wings 10 of the socket. By this means it will be seen that the indicator can never be secured to the boat except in the proper rela-

tion to the socket, and that it may be easily lifted from the socket when it is to be removed. The wedge action causes the weight of the indicator to force it downwardly in the socket to prevent accidental dis-engagement.

Referring now to Figs. 6, 7 and 8, I have shown therein a means for securing the impact tube to the boat. The means is illustrated in connection with the arrangement shown in Fig. 2, but is equally applicable to the arrangement shown in Fig. 1.

When the impact tube is mounted on the side of the boat, as shown in Fig. 2, a projection 14 of stream-line configuration is secured to the side of the boat, and on the rear of this projection is mounted a bracket 15. It is, of course, to be understood that this bracket is the same as that secured on the stern of the boat when the arrangement shown in Fig. 1 is adopted.

The bracket 15 comprises a plate 16 which may be secured to the boat as by screws 17, and extending from this plate is a socket 18 which is also preferably stream-line in configuration. The socket has an opening 19 therethrough, which is non-circular in cross-section, and is preferably of the stream-line configuration shown in the drawing, to receive a stream-line impact tube 3. The impact tube is provided with an opening 20 facing towards the bow of the boat, through which pressure may be transmitted through the tube 2 to the indicator as the boat moves through the water, and by adopting a suitable non-circular shape for the socket opening and tube, it is impossible to place the tube in the socket in any position but the correct one. This relation between the impact tube and the fitting within which it is mounted, which prevents placing of the tube in the socket in any position but the correct one, is not, per se, my invention, but is the invention of Robert F. Golden, and is more fully described and claimed by him in his copending application, Serial No. 434,532.

Downward movement of the tube in the socket is limited by a lug 21 which is adapted to engage the top of the socket. This lug also serves as a detent to be engaged by a spring 22 which is pivoted in the bracket and prevents accidental upward movement of the tube with respect to the bracket. The spring is preferably so arranged with respect to the detent that a strong upward pull on the tube will cause dis-engagement of the spring, the upper surface of the detent being beveled for this purpose.

The impact tube is preferably arranged with a notch 23 forming a weak point, so that in case the impact tube should strike the bottom, or any other obstruction, the tube will break before causing other damage of any kind.

From the above description, it will be seen that I have provided an indicating means in the form of a complete unit, which may be readily put into position on a boat and removed therefrom without employment of any skilled labor, and without piercing the hull. A straight upward movement of the indicator and a straight upward pull on the tube or hose 2, will cause disconnection of the indicator and the impact tube respectively. The flexible connection 2 permits the entire unit to be then folded up and stored away in a conveniently small place until again ready for use. When the unit is to be again installed, this can only be done in one way, which will cause the different parts to occupy their correct relation to each other and to the boat.

I claim:—

1. In combination, a boat hull, a bracket secured to a vertically extending part of the exterior of said hull adjacent the load line, an impact tube having an opening, means to detachably support the tube on the bracket with said opening, disposed below said load line, a speed indicator, means to detachably secure said indicator to said hull, and means connecting said impact tube to said indicator.

2. A speed indicating unit comprising an indicator having means for detachably securing it to a boat, an impact tube having means for detachably securing it to the exterior of a boat adjacent the load line, and a flexible tube connecting said impact tube to said indicator, whereby the unit may be detachably placed in position upon a boat and removed therefrom.

3. In combination, a boat hull having a stream-line projection on the side thereof, a stream line bracket disposed at the rear of said projection and having a vertical non-circular opening therethrough, an impact tube of the same cross section as said hole and adapted to be disposed therein, said cross section being such that the tube may be placed in the hole in one position only, a speed indicator adapted to be detachably secured to said boat, and a flexible tube connecting said impact tube and said indicator.

4. In combination, a boat hull having a bracket secured to the exterior thereof, a socket on said bracket, an impact tube adapted to be received in a hole in said socket, and a spring yieldingly holding the impact tube in place in the socket.

5. In combination, a boat hull having a bracket secured to the exterior thereof, a socket on said bracket, an impact tube adapted to be received in a hole in said socket, said hole and impact tube being of the same cross section, and said cross section being of such shape that the tube can be placed in the hole in only one position, for the purpose set forth.

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