Aug. 2, 1932. R. F. GOLDEN 1,869,962

SPEED INDICATOR

Filed March 10, 1930

Fig. 1.

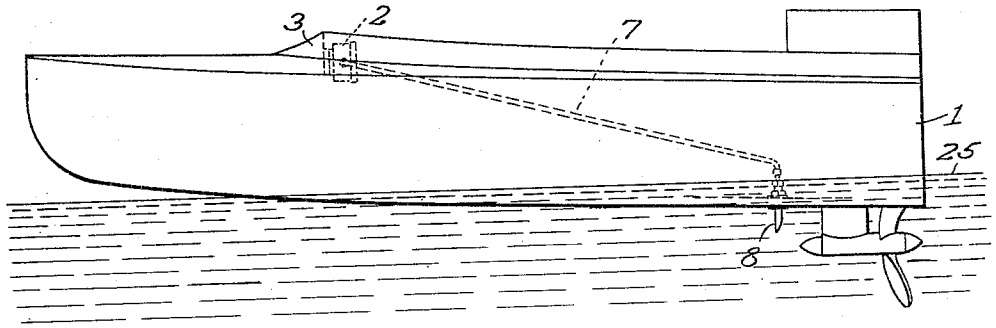


Fig. 2.

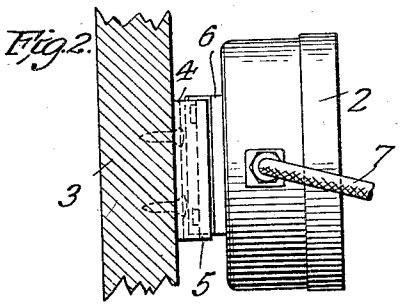


Fig. 3.

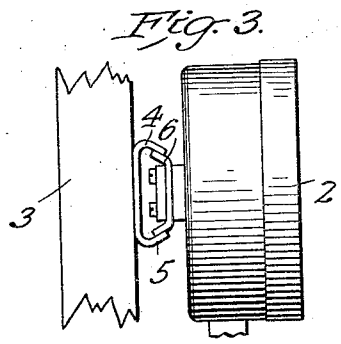


Fig. 4.

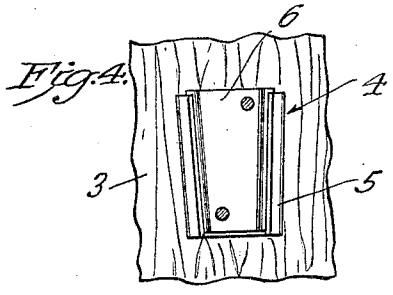


Fig. 5.

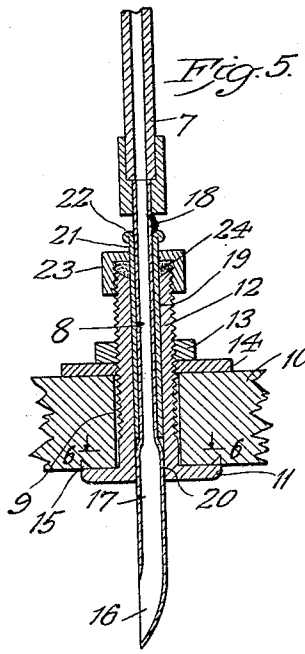


Fig. 6.

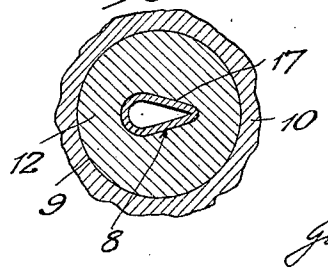


Fig. 7.

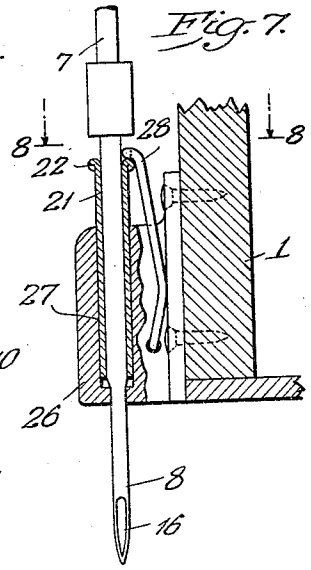
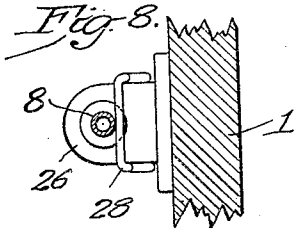


Fig. 8.



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UNITED STATES PATENT OFFICE

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SPEED INDICATOR

Application filed March 10, 1930. Serial No. 434,532.

This invention relates to a novel and improved form of speed indicator, particularly adapted for use with outboard motor boats, and the novel features will be best understood from the following description and the annexed drawing, in which:

Fig. 1 is an elevation of a boat having one form of the invention applied thereto.

Fig. 2 is a view showing the indicator in side elevation.

Fig. 3 is a plan view of the structure shown in Fig. 2.

Fig. 4 is a view showing the coacting relation between the fitting on the indicator and the socket.

Fig. 5 is a view on an enlarged scale showing a section through a portion of the hull bottom.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Fig. 7 is a view showing the impact tube of Fig. 5 used with a different kind of fitting.

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

The invention is shown as embodied in a device for use with an outboard motor boat 1, and it comprises an indicator 2 which may be mounted on the instrument board 3 of the boat. The indicator is preferably mounted detachably so that it may be easily removed when the boat is tied up and out of use, in order to avoid theft. For this purpose a socket 4 is secured to the instrument board having wings 5 forming together a wedge-shaped recess in which is received a coacting wedge 6 on the indicator.

Extending from the indicator is a flexible metal hose 7 which leads to an impact tube 8. In Fig. 5 this tube is shown as extending through a hole 9 in the bottom 10 of the boat hull. The hole is shown as receiving a fitting having a head 11 secured to the exterior of the bottom and having a stem 12 extending to the interior of the hull. This stem is shown as being threaded to receive a nut 13 which, with the washer 14 and the head 11, secure the fitting in position. The fitting may be provided with projections 15 extending from the head into the material of the bottom to prevent accidental movement of the fitting.

The impact tube is provided with an opening 16 facing toward the bow of the boat, so that when the boat moves through the water the movement will cause water to enter the impact tube and create a pressure in the hose 7 which will be transmitted to the indicator in a well-known manner. The tube is shown as being of stream-line cross section where it projects beyond the boat, and this cross section is preferably extended for a distance into the fitting, and the hole in the fitting has a lower portion adapted to fit this stream-line configuration. By this arrangement, the tube offers less resistance to the movement of the boat through the water, and it is also insured that the tube shall be placed always in the proper position in the fitting.

The lower portion 17 of the tube which has this stream-line cross section is preferably deformed from a tube having a circular cross section, and the upper portion 18 of the tube is left with this circular cross section. This means that the portion having a stream-line cross section has one dimension greater than the maximum dimension of the portion 18 and, therefore, the upper portion 19 of the hole through the stem 12 must be made of larger diameter than the lower portion 20 of the same hole, the portion 20 being made of the same cross section as the portion 17 of the impact tube. A sleeve 21 is accordingly secured to the portion 18 of the impact tube, to make a close fit with the upper portion 19 of the hole through the stem of the fitting. The sleeve may be secured to the tube in any suitable manner, and its upper edge is preferably beaded over, as shown at 22. A gland nut 23 may be threaded to the stem 12 and a suitable packing 24 may be used to insure against leakage, it being understood that the fitting is always below the load water line 25 of the boat.

In Figs. 7 and 8 I have shown another form of fitting 26 which, in this form, is secured to the exterior of the hull and has a hole 27 therethrough extending vertically, as does the hole through the stem 12. In this form a spring 28 is provided which engages the bead 22 to secure the tube in position in the fitting. The fitting shown in Figs. 7 and

8 is more particularly described and claimed in the copending application of Irvin W. Masters, Serial No. 398,874.

From the above, it will be seen that I have provided a form of speed indicator which can be detachably used either inboard or outboard of a boat, the attachment or detachment being effected readily and without fear of the impact tube being inserted in the wrong position.

The tube is preferably made of light-weight material so that upon colliding with rocks or other obstructions it will bend or break without damage to the boat. At the same time, the device may be made efficiently and at a reasonable cost and may be easily applied to existing boats.

I claim:—

1. In combination, a boat hull having a fitting with a hole therein below the load line, a speed indicator, means to secure said indicator to said hull, an impact tube extending through said hole and having an opening, a tube connecting the impact tube to the indicator, and coacting means on said impact tube and fitting preventing insertion of the impact tube in the hole except with said opening facing the bow of the boat.

2. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having a portion thereof non-circular in cross section, and an impact tube extending through said hole and having a non-circular portion disposed in, and of the same form as, said non-circular portion of the hole, said form being such that the tube may be placed in the fitting in one position only.

3. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having the lower portion thereof non-circular in cross section, an impact tube extending through said hole and having a lower non-circular portion of the same form as said non-circular portion of the hole and an upper portion spaced from the walls of the hole, and a sleeve surrounding the portion of the tube above said non-circular portion and filling the space between the tube and the walls of the hole.

4. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having the lower portion thereof non-circular in cross section, an impact tube extending through said hole and having a lower non-circular portion of the same form as said non-circular portion of the hole and an upper portion spaced from the walls of the hole, a sleeve surrounding the portion of the tube above said non-circular portion and filling the space between the tube and the walls of the hole, and means securing the tube in the hole.

5. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having the lower portion thereof non-circular in cross section, an impact tube extending through said hole and having a lower non-circular portion of the same form as said non-circular portion of the hole and an upper portion spaced from the walls of the hole, said non-circular portion of the tube having one dimension greater than the largest dimension of the tube above the non-circular portion, and a sleeve surrounding the portion of the tube above said non-circular portion and filling the space between the tube and the walls of the hole.

6. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having the lower portion thereof non-circular in cross section, an impact tube extending through said hole and having a lower non-circular portion of the same form as said non-circular portion of the hole and an upper portion spaced from the walls of the hole, said non-circular portion of the tube having one dimension greater than the largest dimension of the tube above the non-circular portion, a sleeve surrounding the portion of the tube above said non-circular portion and filling the space between the tube and the walls of the hole, and a gland surrounding said sleeve and secured to said fitting.

7. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having the lower portion thereof non-circular in cross section, an impact tube extending through said hole and having a lower non-circular portion of the same form as said non-circular portion of the hole and an upper portion spaced from the walls of the hole, and a sleeve surrounding the portion of the tube above said non-circular portion and filling the space between the tube and the walls of the hole and secured to the tube, for the purpose set forth.

8. In combination, a boat hull having a fitting with a vertically extending hole therethrough, said hole having the upper portion thereof circular and the lower portion thereof non-circular in cross section, an impact tube extending through said hole and having the upper portion thereof circular and a lower non-circular portion of the same form as said non-circular portion of the hole, said non-circular portion of the tube having one dimension greater than the circular portion thereof, and a sleeve surrounding the circular portion and filling the space between the tube and the walls of the hole.

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