Oct. 10, 1950 H. K. BLUHM 2,525,639

BOAT SPEEDOMETER

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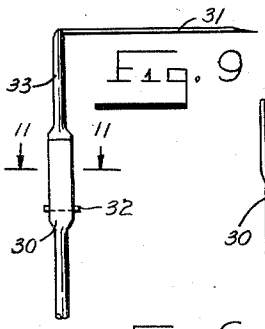


Fig. 9

Fig. 10

Fig. 1

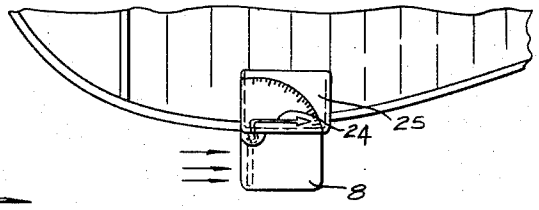


Fig. 6

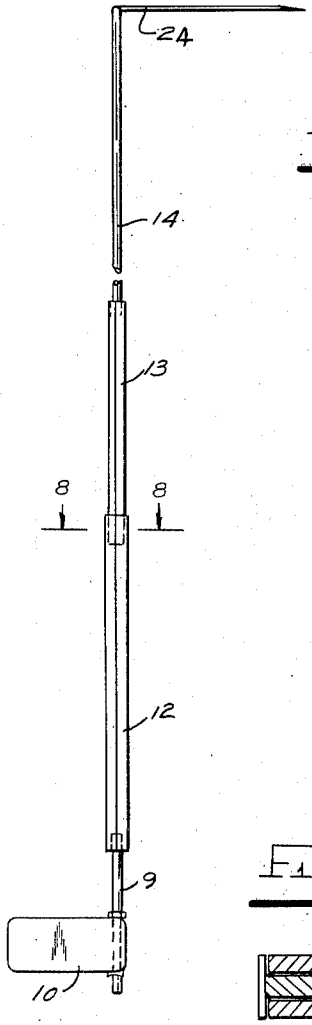


Fig. 5

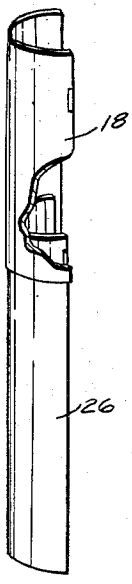


Fig. 7

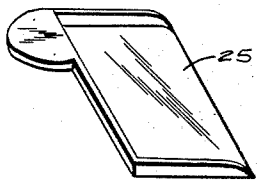


Fig. 8

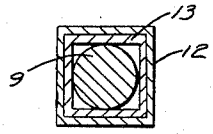
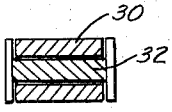


Fig. 11



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Fig. 2

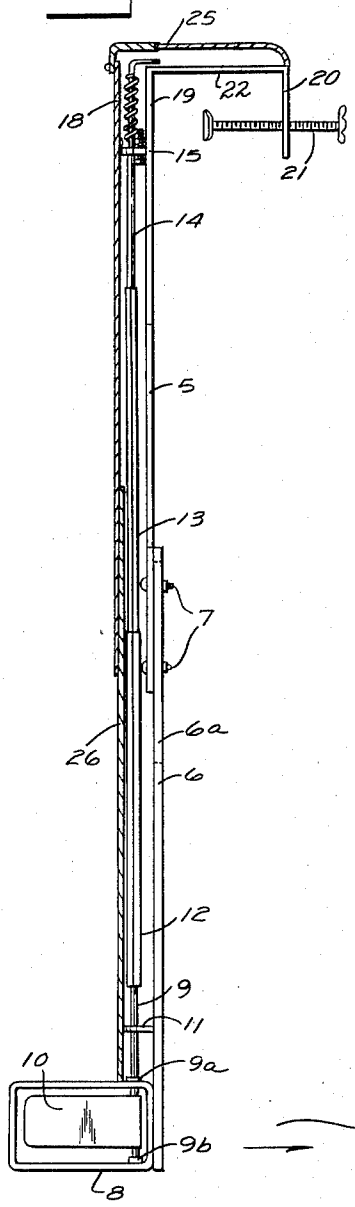


Fig. 3

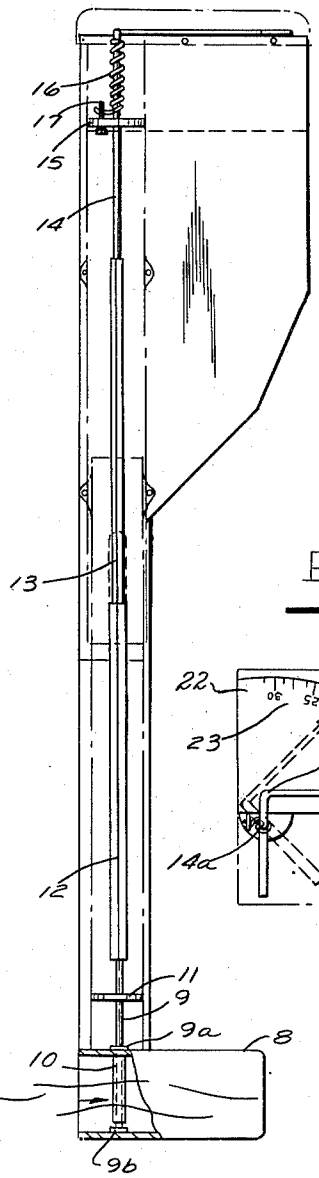
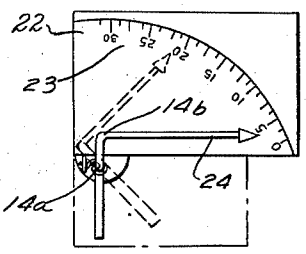


Fig. 4



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BOAT SPEEDOMETER

Harland K. Bluhm, Wadena, Minn.

Application June 4, 1946, Serial No. 674,251

2 Claims. (Cl. 73—186)

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This invention relates to an improved speed indicator for boats, and one of its objects is to provide a vertical shaft having on its lower end a current shifted blade and on its upper end an indicator, and mounted to turn in an adjustable frame supported on the side of the boat, against the resistance of an adjustable spring, so that the pressure developed by the movement of the boat in water will be indicated on a scale over which the indicator travels, and which is calibrated to the proportional reaction of the spring.

Another object of the invention is to provide a speed indicator for boats with an indicator which is driven directly from the current blade, and all gear mechanism dispensed with.

A further object of the invention is to provide a frame for mounting the device on the side of a boat which can be vertically adjusted, and to combine with this frame a shaft comprising interfitting sections, which automatically adjust themselves when the sections of the frame are adjusted on each other.

With the above and other objects in view, the invention comprises certain new and useful constructions, combinations and arrangements of parts, clearly described in the following specification, and fully illustrated in the drawings, in which—

Fig. 1 is a fragmentary plan view of a boat, showing the speed indicating device mounted thereon.

Fig. 2 is a vertical sectional view through the frame of the device.

Fig. 3 is a side elevation of the device, shown partly in section.

Fig. 4 is a plan view of the scale and indicator, showing the current responsive blade in dotted lines.

Fig. 5 is a perspective view of a sectional shaft shield.

Fig. 6 is a side view, broken away, of an adjustable shaft.

Fig. 7 is a perspective view of a cover for the scale.

Fig. 8 is a detail sectional view of the adjustable shaft, taken on line 8—8 of Fig. 6.

Fig. 9 is a fragmentary side view of a modified form of the shaft.

Fig. 10 is a perspective view of a fork for this modified construction.

Fig. 11 is a detail sectional view, taken on line 11—11 on Fig. 9, looking in the direction of the arrows.

Referring to the accompanying drawings, which illustrate the practical embodiment of the invention, 5 designates an upper frame section, the lower end of which is disposed in overlapping engagement with the upper end of the lower frame section 6, which is provided with a longitudinal slot 6a, through which the bolts 7, carried by the lower end of the upper frame section 5 projects, so that the two sections may be adjustably coupled on each other for relative vertical movement, to raise and lower the lower end of the lower frame section 6.

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To the lower end of the lower frame section 6 a housing 8 is secured, which is closed at the top and bottom and at both ends thereof, but open at both sides, so that water will freely flow from the front side to the rear side thereof. The lower end of the lower shaft section 9 extends through this box and has bearings at 9a and 9b thereon, and a current responsive blade 10 is mounted on this shaft section to swing wholly in the housing box 8.

The shaft section 9 is round and has a bearing in the bracket lug 11, which projects from the side of the lower frame section 6. To this round shaft section a square shaft section 12 is fixed, and this square shaft section, being tubular, receives the square shaft section 13 for free sliding movement, but the two shaft sections are interfitted so that they will turn together. The upper end of the inner square shaft section 13 carries the round shaft section 14, which turns in the bracket lug 15 of the upper frame section 5. A coil spring 16 is mounted on this round shaft section 14, and its lower end is engaged by the screw 17, which is adjustable on the cover or shield section 18. The other end of the spring is secured to the shaft 14.

The upper end of the upper frame section 5 is formed to provide an outer jaw 19 and an inner jaw 20. On the inner jaw 20 one or more clamping screws 21 are threaded, so that the outer jaw 19 may be clamped against the hull of a boat. The intermediate portion 22 of the frame section 5 which spaces the inner and outer jaws from each other, is provided with a speed scale 23, which is calibrated to the strength of the spring 16.

The upper end of the upper shaft section 14 is formed with a right angular bend 14a, and another right angular bend 14b, and thus provides a pointer arm 24, which is adapted to swing over the scale 23. The upper end of the shield or cover section 18 carries a cover 25 for the scale 23. The lower end of the shield or cover section 18 overlaps the upper end of a shield or cover section 26. The lower end of the shield or cover

section 26 is secured to the lower frame section 6.

In addition to the construction above described, the upper end of the shaft may be equipped with a vertical fork 30, Figs. 9, 10 and 11, and pointer arm 31 may be attached to short shaft section 33, which is equipped with a pin 32 which slides in the fork 30. This construction permits of relative sliding movement between the pointer and the shaft, to take up vertical adjustment.

When the device is attached to the side of a boat, or other float, Fig. 1, in fishing or other water operations, the pressure upon the current responsive blade will increase as the velocity of the boat increases. The greater the water pressure acting on the current blade the more the vertical shaft will turn from its normal position, and the force of the turning will be taken up by the spring. The degree of movement of the pointer carried by the shaft over the scale will indicate the speed of the boat, as with precision springs and a calibrated scale this movement may be accurately indicated.

The transmission of turning movement from the blade to the pointer is direct, as no gear mechanism or leverage system is employed, other than that provided by the shaft, the blade and the pointer, balanced by the spring. In this way the mechanism is freed of many operational troubles which develop in open weather from the use of gear mechanism.

It is understood that such changes in the details of construction, combination and arrangement, may be made, as falls within the scope of the invention, as defined by the claims hereof.

Having described the invention, I claim as new:

1. A speed indicator comprising frame sections having overlapping ends adjustable on each other, a clamp carried by the uppermost frame section, a housing carried by the lowermost frame section, a shaft comprising vertically sliding sections rotating together and mounted to turn on the frame sections, a current blade carried by the lower end of the shaft and swinging in the housing, a pointer carried by the upper end of the shaft, a scale carried by the uppermost frame section over which the pointer swings, and a spring acting on the shaft to maintain the pointer in normal zero position.

2. A speed indicator comprising frame sections having overlapping ends adjustable on each other, a clamp carried by the uppermost frame section, a housing carried by the lowermost frame section, a shaft comprising vertically sliding sections rotating together and mounted to turn on the frame sections, a current blade carried by the lower end of the shaft and swinging in the housing, a pointer carried by the upper section of the shaft, a scale carried by the uppermost frame section over which the pointer swings, and a spring acting on the shaft to maintain the pointer in normal zero position, and the upper frame section being bent to fit over the top edge of the side of a boat, a clamp screw extending through the bent end section to fix the section to the boat, said scale being on the bent portion.

HARLAND K. BLUHM.

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