GRAY & BROWN.

Speed Measure.

No. 16,333. Patented Jan. 6. 1857.

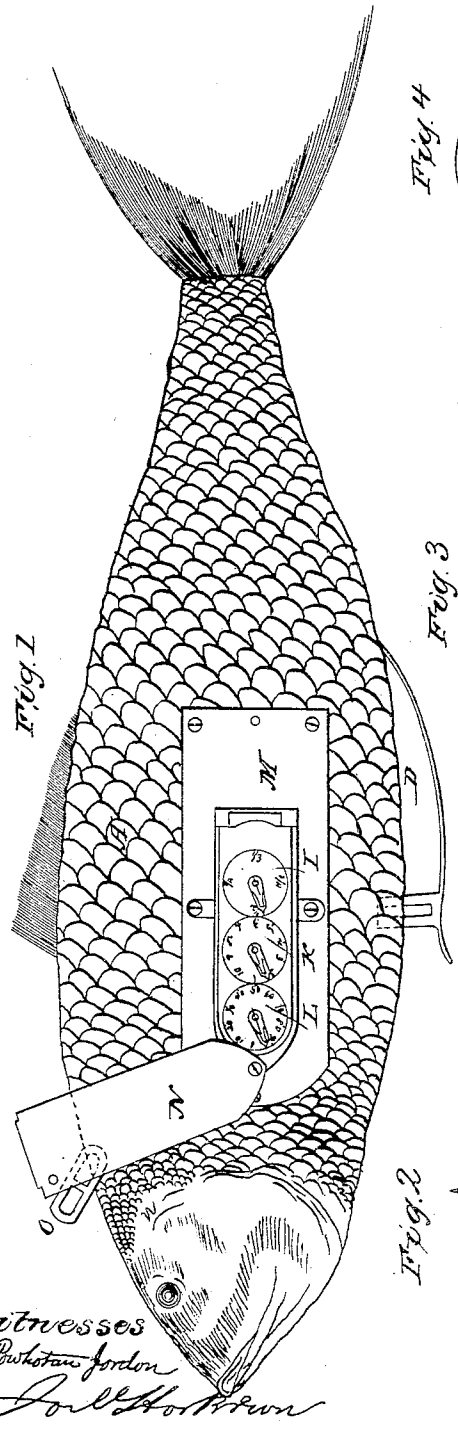


Fig. 1

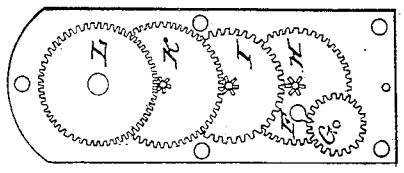


Fig. 4

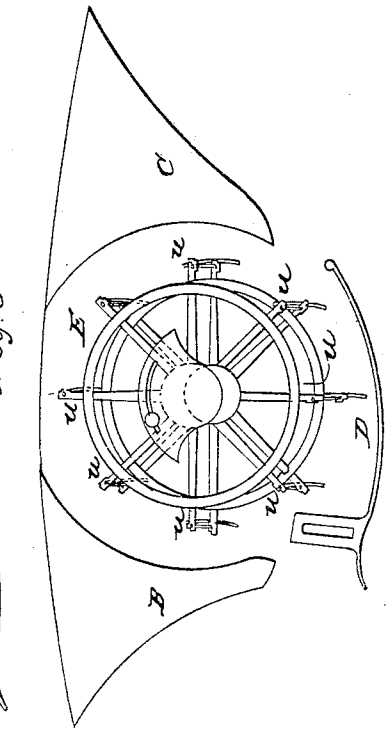


Fig. 3

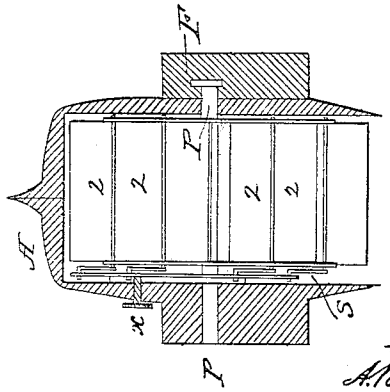


Fig. 2

Witnesses
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UNITED STATES PATENT OFFICE.

ANDREW B. GRAY AND ALEXR. H. BROWN, OF WASHINGTON, DISTRICT OF COLUMBIA.

VELOCIMETER FOR VESSELS.

Specification of Letters Patent No. 16,333, dated January 6, 1857.

To all whom it may concern:

Be it known that we, ANDREW B. GRAY and ALEX. H. BROWN, of the city of Washington and District of Columbia, have invented a new and useful Invention for Ascertaining the Distance Traversed as Well as the Speed of Either Sail or Steam Vessels; and we do hereby declare that the following is a clear, full, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a vertical side view showing the box and register dials; Fig. 2, a sectional end view cut through from *a* to *b* and giving an end view of the adjustable paddle wheel; Fig. 3 is a skeleton side view of adjustable paddle wheel and guide plates, and Fig. 4 a view of machinery to act upon the hands of the dial plates.

We will now proceed to specify the various parts of this marine velocimeter or ship log as follows:

A, Fig. 1, is a box of any desired size or shape for the purpose of containing the wheel for actuating the registering machinery, as well as the guide plates B, C, and D.

E, Fig. 2, is a paddle wheel made adjustable to any required angle with a view to regulate its revolutions.

P, P, Fig. 2, is the main shaft of the paddle wheel; 2, 2, 2, 2 paddles; R, R, R, R, cranks upon paddle shafts connecting with the regulating wheel S, Fig. 3.

T is the eccentric forming a part of the regulating wheel S, through the arms *u u u u u u u u u*.

V, Fig. 3, is a cam which is also a part of the regulating wheel. In said cam there is a semicircular slot W, through which a bolt passes in order to secure the regulating wheel at any desirable point by turning the nut upon the said bolt *x*, Figs. 2 and 3, the paddles from a vertical to a horizontal position it is only necessary to take hold of the cam and turn it from right to left, when the slot W will revolve or describe a semicircle around the bolt *x*, and thus the paddles may be adjusted to any desired angle from a vertical position by moving the cam more or less as the case may require and then securing it with the bolt *x*, to its place. The paddle when in a vertical position presents more direct surface to the action of the water and consequently the wheel must revolve more rapidly than when the paddle is thrown in a more oblique position to the action of the water. In this manner the wheel can be regulated to act upon the registering portion of the log with as much precision as the regulating of a watch, a quality utterly unattainable in the ordinary radial wheel from its want of adjustability in its paddles. Upon one end of the shaft of this wheel is a tappet or wheel with but one tooth, F, for the purpose of revolving the first wheel G, Fig. 4, upon whose shaft is a small pinion with six teeth, which gears into the tooth wheel H with 42 teeth, upon whose shaft is a pinion with six teeth, which gears into the third wheel I, with 36 teeth, upon whose shaft is a pinion with six teeth, which gears into a fourth wheel K with 60 teeth, upon whose shaft, there is a pinion with six teeth, which gears into a fifth and last wheel L, which has also 60 teeth. The third wheel I registers through its hand upon the first dial plate the fractions of a mile. The fourth wheel K through its hand registers the number of miles and the fifth wheel L, through its hand registers from ten to one hundred miles.

M, Fig. 3, is the register case secured to the side of the box A, Fig. 1, in order to bring the registering machinery in contact with the tappet F, Fig. 2.

N, Fig. 3, is a lid to secure the register hands from the action of the water while the log is in operation.

O, Fig. 1, is a ring into which is rove a line sufficiently strong to drag the log through the water, while the vessel is in motion.

In order to operate this log it is only necessary to secure it with a line fastened to the ring O and throw it overboard and time it with a chronometer while it is in the water. The distance passed over will be indicated upon the register dial. Or it may be fixed permanently to the ship, in which case it will measure the distance from port to port.

What we claim and desire to secure by Letters Patent, is—

The use of the adjustable paddle wheel which can be graduated to any number of revolutions by presenting more or less surface of paddle to the action of the water, in order first to fix it at its true point for registering correctly, and second, should any wear take place in the machinery for registering it can at once be adjusted by changing the angle of the paddle.

A. B. GRAY.
ALEXANDER H. BROWN.

Witnesses:
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WM. W. KING,