

(No Model.)

W. J. SMITH.
SPEED RECORDER.

No. 588,248.

Patented Aug. 17, 1897.

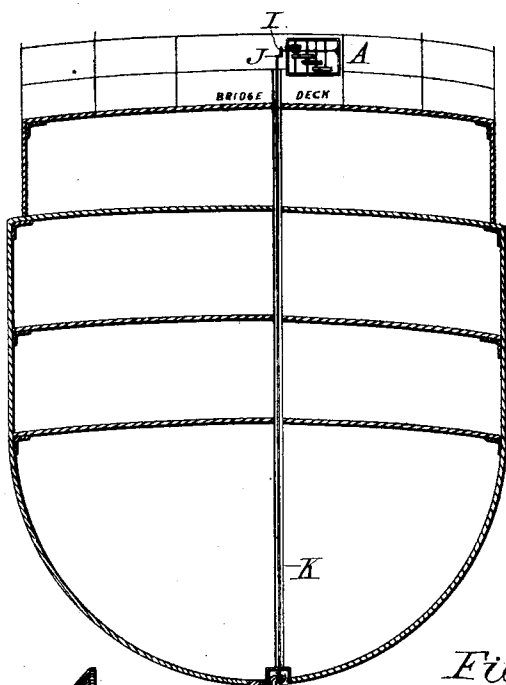


Fig. 1.

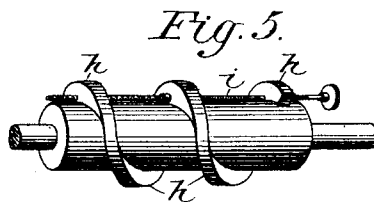


Fig. 5.

Fig. 4.

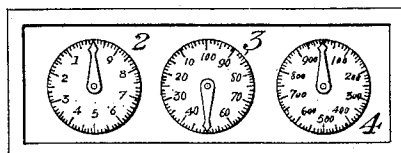
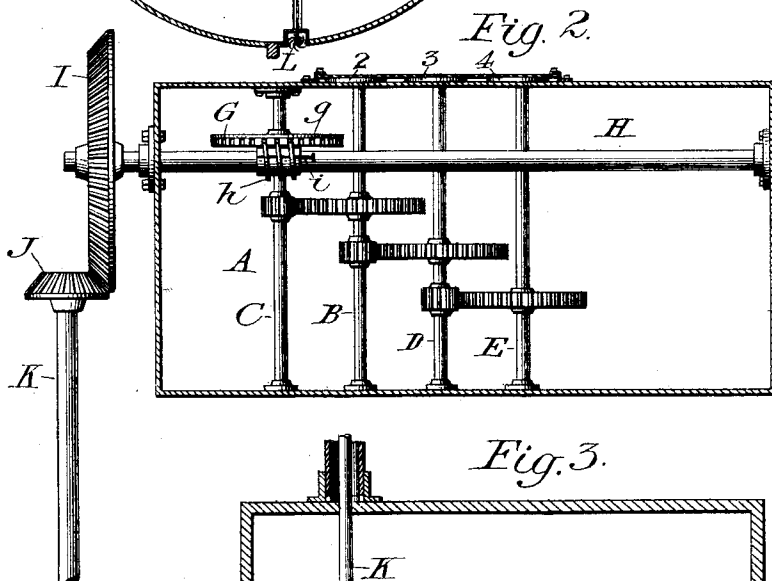


Fig. 2.

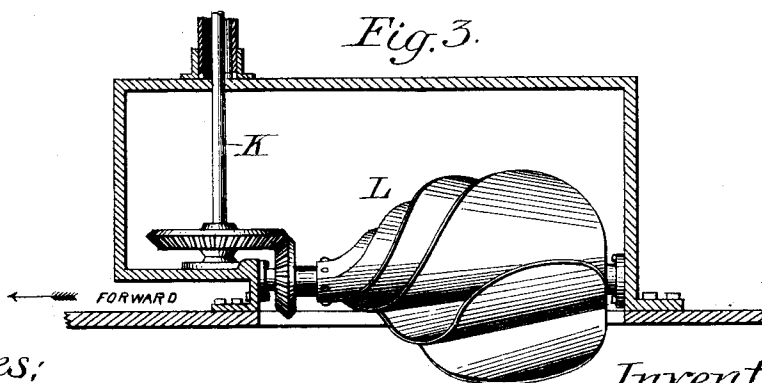


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM JAMES SMITH, OF VICTORIA, CANADA.

SPEED-RECORDER.

SPECIFICATION forming part of Letters Patent No. 588,248, dated August 17, 1897.

Application filed February 15, 1895. Serial No. 538,572. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JAMES SMITH, a subject of the Queen of Great Britain, residing at Victoria, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Speed-Recorders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the present invention is the provision of a recorder for water-craft which will be accurate and at all times indicate the correct speed of the vessel and can be read by any officer or authorized person.

Figure 1 is a sectional view of a vessel, showing the application of the invention. Fig. 2 is a detail view of the registering mechanism. Fig. 3 is a detail view showing the motor-wheel set in a pocket in the ship's bottom. Fig. 4 is a detail view of the indicating-dials; and Fig. 5 is a detail view, on an enlarged scale, of the adjustable worm on the main shaft.

A represents the registering mechanism, which is conveniently located on the upper part of the ship, so as to be under the observation of the officer or other person charged with the safe running of the vessel. The operating parts will be suitably housed and the indicating hands and dials will be protected by glass or other means and exposed for constant readings. The units-staff B is geared with the power-transmitting shaft C, and the indicating mechanism 2 provided therefor registers the number of miles up to ten and the fractional parts of a mile. The staff D, operated from the staff B, records every ten miles on the indicating mechanism 3, the latter recording the number of miles up to one hundred. The staff E is actuated from the staff D, and the recording mechanism 4 connected therewith registers the number of miles up to one thousand. It will be understood that there may be as many of these staffs B D, &c., as desired, and that the capacity of the recording mechanisms 2, 3, and 4 may be varied at will, but will be the same for each register. The main wheel G on the shaft C is provided on one side with a series of teeth or pins *g*, which mesh with a worm-

thread *h* on a longitudinal shaft H. One end of the shaft H projects beyond the casing and is provided with a gear-wheel I, which meshes with a pinion J on a vertical shaft K.

The worm-thread *h* is a spiral of steel secured midway of its ends to an enlarged portion of the shaft H. Its end portions are connected by the set-screw *i*, screw-threaded right and left, as shown, and passing through corresponding screw-threaded apertures in said end portions, whereby the spiral can be so adjusted as to calibrate or standardize the reading of the recorder, as may be required.

The motor-wheel L is located at the bottom of the ship close to the keel and is seated partly within and partly outside of a pocket, by which it is protected from grounding when the vessel is moving in shallow water. The curved arms of the motor-wheel are engaged by the water in the forward movement of the ship, which results in a rotary movement of the wheel and the shaft K carrying the same. This shaft passes vertically through a tubular casing extending upward from the ship's bottom and is journaled in suitable bearings provided therein. By reason of its location the shaft or arbor of the motor-wheel is out of the path of the live-water current and is correspondingly protected from encumbrance by driftage, such as seaweed, rope-yarn, and the like. Moreover, the outer or convex surfaces of the motor-wheel blades in rising from the live-water through the dead-water chamber or pocket readily free themselves from any such driftage, while at the same time the dead water in the chamber acts as a partial brake upon the wheel to prevent its too rapid and violent revolution.

By locating the motor-wheel low down it is not effected by the water-cress, but is at all times submerged and in contact with the water. Hence the indications of the register when in working condition are accurate.

Having thus described the invention, what is claimed as new is—

1. In a speed-recorder for vessels, the combination with the motor-wheel and the power-gearing driven thereby, of register-gearing driven by the power-gearing through the intermediacy of a worm having an adjustable thread and an indicator for the register whereby an adjustment of the thread may be

made to establish the correct rate of transmission between the power-gearing and register-gearing and thus standardize or calibrate the register; substantially as described.

- 5 2. A speed-recorder for vessels, comprising a register, power-transmitting gearing therefor, and a motor-wheel for actuating said gearing, the motor-wheel being mounted upon a shaft extending fore and aft of the ship and
10 having blades revolving partly within a dead-

water chamber or pocket formed in the ship's bottom; substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM JAMES SMITH.

Witnesses:

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